

# JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

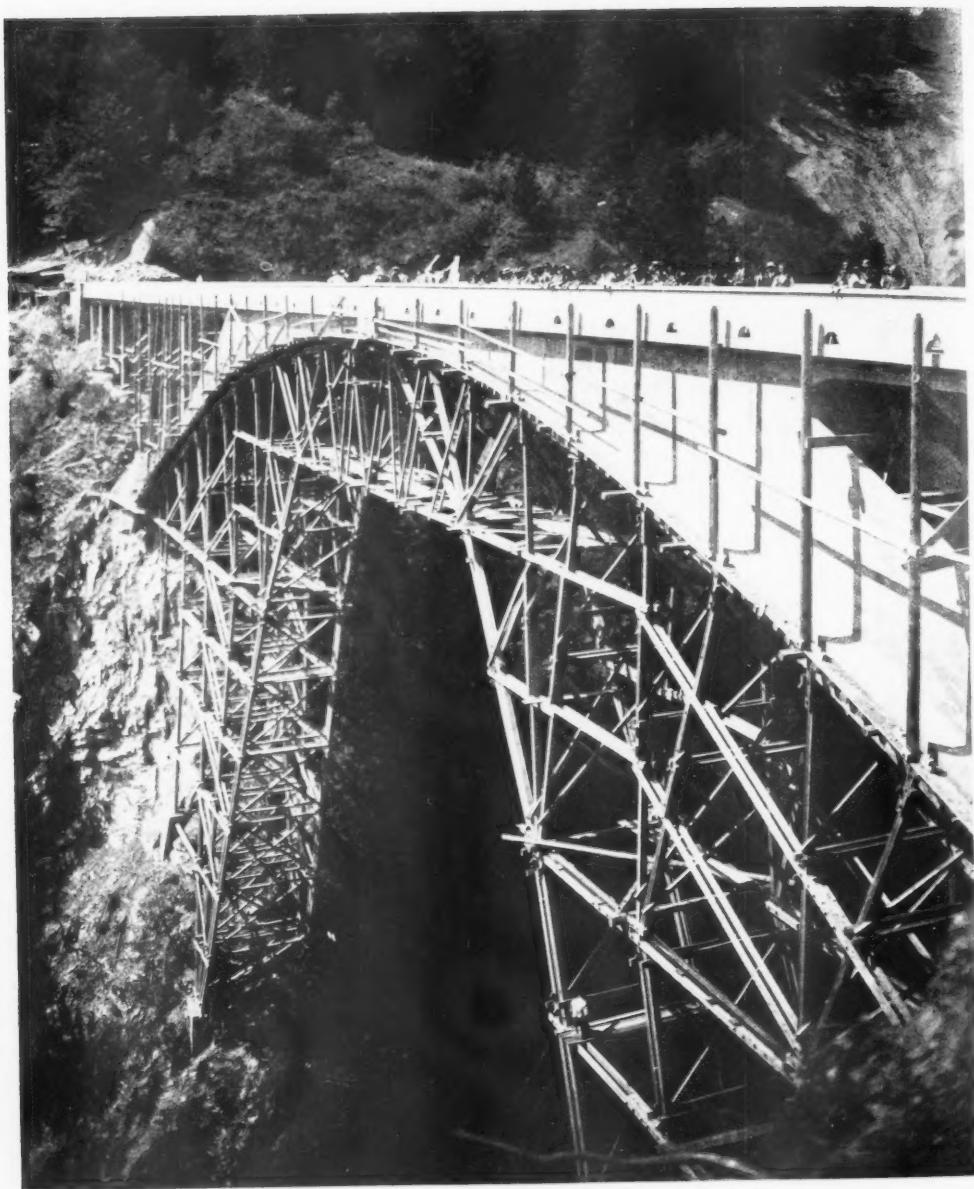
THIRD SERIES

VOL. 45. No. 19

12 SEPTEMBER 1938

## CONTENTS FOR 12 SEPTEMBER 1938

SALGINATOBEL BRIDGE, BY ROBERT MAILLART .. .. .	Frontispiece
JOURNAL .. .. .	955
ROBERT MAILLART: THE ARCHITECTURE OF A GREAT SWISS ENGINEER. P. Morton Shand .. .. .	957
A RECENTLY FOUND JAMES WYATT DESIGN. Gavin Walkley [A.] .. .. .	970
ARCHITECTURAL COPYRIGHT .. .. .	975
FIRE RESISTANCE. J. Shaw, B.Sc., A.C.G.I., Assoc.M.Inst.C.E., A.M.I.Struct.E. .. .. .	978
VOLUME II OF THE CATALOGUE .. .. .	982
BISHOP BURROUGHS MEMORIAL CHURCH OF THE EPIPHANY, GIPTON, LEEDS. N. F. Cachemaille-Day [F.] .. .. .	983
BOOK REVIEWS:	
THE WREN SOCIETY .. .. .	987
LONDON BUILDING ACTS. A. H. B. .. .. .	988
REVIEW OF PERIODICALS .. .. .	988
CORRESPONDENCE .. .. .	991
OBITUARY:	
F. C. BAYLISS [F.] .. .. .	992
F. G. F. HOOPER [Ret. F.] .. .. .	992
G. COTMAN [F.] .. .. .	992
H. OSWALD [F.] .. .. .	992
A. F. B. PAUL, M.C. [F.] .. .. .	993
R. J. W. NEWMAN [F.] .. .. .	993
S. TUGWELL [F.] .. .. .	993
FREDERICK SALE [A.] .. .. .	993
J. L. GRANT [A.] .. .. .	993
SCHOOL OF PLANNING AND RESEARCH FOR NATIONAL DEVELOPMENT .. .. .	994
NOTES .. .. .	994
EXAMINATION RESULTS .. .. .	995
PROBATIONERS .. .. .	996
NOTICES .. .. .	997
COMPETITIONS .. .. .	998
MEMBERS' COLUMN .. .. .	1000
ARCHITECTS' AND SURVEYORS' APPROVED SOCIETY .. .. .	1000
ARCHITECTS' BENEVOLENT SOCIETY .. .. .	1000



Salginatobel Bridge, by Robert Maillart, 1929-30

# JOURNAL OF THE ROYAL INSTITUTE *of* BRITISH ARCHITECTS

VOL. 45. 3RD SERIES

12 SEPTEMBER 1938

No. 19

## Journal

### THE NEXT SESSION

The sessional papers programme from next autumn has been fixed and as usual the papers have been chosen to cover as wide a range of interests as possible. The wide responsibilities of the profession as a unit in the building industry are recognised by the first paper, on 21 November, when Mr. Oliver Roskill, an industrial economist and member of the important research group P.E.P. (Political, and Economic Planning), will read a paper on *The Economics of the Building Industry—Achievements and Anomalies*. This is a tougher subject than we often find in these programmes, but the sessional meetings were never intended to be entertainments merely nor means of collecting a few practical hints from some successful practitioner. The second paper, on 5 December, by Professor W. G. Holford on *The Next Twenty Years* is, to put it in a rather unctuously patronising way that is far from expressing the intention of the meeting, a meeting to get the young man's point of view. What Professor Holford has to say is likely to be interesting; it is also likely to be important, because he is one of the people on whom a big share of the responsibility for what does happen in the next twenty years will fall. The R.I.B.A. solicitor, Captain Sydney Redfern, reads the third paper on 6 February, on *Some Legal Aspects of an Architect's Practice*. Mr. John Summerson, who read the first sessional paper in the Portland Place building on John Nash, is to read another, on 20 February, on a subject concerning the period in history on which Mr. Summerson is one of the first authorities. His title is *The Great Landowners' Contribution to the Architecture of London*.

After London the provinces get their special look in when Mr. Benslyn reads a paper on 6 March on *Recent Architecture in the Provinces*, and finally, on 24 April, Professor Richardson has an evening on *Railway Stations*. These sessional papers do not, of course, comprise the full programme, which includes also the President's Inaugural Address on 7 November and, after Christmas, the criticism of Students' Prize drawings and the President's Address to students.

### THE "SMALL HOUSE" EXHIBITION

The subject of the Institute's autumn exhibition is the small house provided for the person of moderate

means. The organising committee, though aiming at interesting the typical householder, are treating their subject broadly. They are not, for instance, concerning themselves with *how* a house is obtained (i.e., municipal, speculative or privately built) but with *what* is provided. The exhibition has three sections. The first points out the evils of unconsidered development and shoddy building; the second is a brief historical review, illustrating some good house groups from the past; the third shows ways of improvement in planning, structure and equipment. A special point is made of the value to the individual householder of good town planning and site planning and the proper use of planting. The exhibition, which is a small one, is to be opened by Miss Ellen Wilkinson, M.P., and Mr. J. B. Priestley, on Thursday, 13 October, at 3 p.m., and will remain until 29 October.

Preparations for the spring exhibition are well advanced. A title has not yet been chosen, but the subject may be summarised as "roads and building." The general public—and indeed the Government—appear to regard roads and building as separate entities, whereas in fact they form one interlocked subject. New traffic arteries inevitably attract new building, which in fact cannot take place except where there is road access. Therefore road and site planning should be considered together. Further, the road and its buildings should form a permanent new amenity, which requires study of landscaping and planting, of road safety, and of design in garages and petrol stations, inns and roadhouses, bridges, shelters, signs and accessories generally. These facts are commonplaces to architects, but are likely to be "news" to the public. The subject, which at first appears limited, is indeed a very wide one, embracing town planning, housing, location of industry, road engineering and design. The collaboration of the British Road Federation, among other bodies, has been secured.

### THE SCHOOL OF PLANNING

Elsewhere in this issue will be found an announcement concerning the School of Planning and Research for National Development which was started a few years ago by the Architectural Association. The creation

of the school was in the nature of an act of faith; it was apparent that a demand existed for men who were technically trained in the wider aspects of town planning, housing, the location of industry and their many kindred sciences, and that this demand was certain to increase. It was also apparent that such a school was unlikely to be a paying proposition, since the proportion of staff to students must always be high. Recently the A.A. indicated that they were no longer able to maintain the school and the advice of the Advisory Council of the school was accordingly sought. A meeting was held at the R.I.B.A. to explore the position, and, among other suggestions, association with London University was proposed. That idea has now been shelved and the Advisory Council are making themselves responsible for the maintenance and control of the school; it is understood that they have obtained the necessary financial support. It may be noted that, although the school was started by architects, some of its most enthusiastic supporters now are members of other professions, many of them persons of eminence who realise the excellent work that the school is doing. Those who recently heard Sir Raymond Unwin describe at the A.A. the phenomenal growth of national planning in the United States will feel that under his chairmanship the policy and teaching of the school will be on the soundest lines. Mr. E. A. A. Rowse [A.] continues in the post of Principal, which he has capably held from the beginning.

#### POSITION OF THE BUILDING INDUSTRY

The current issue of the *Building Industries Survey*, published by the Building Industries National Council, indicates the extent of the recent decline in building activity. While general employment continues good, certain classes of building show a considerable falling off. This is the case with industrial and commercial building, particularly with factory construction which in some areas has fallen away almost to nothing. The building work of the Rearmament Programme is, however, tending to counterbalance the effect of this decline, so far as the materials production and labour sides of the industry are concerned. Speculative and private house building shows a marked falling off in the South of England, though the North of England and Scotland show increases, and the Midlands are stable; this appears likely to continue. Local Authority house building is, however, increasing in volume. Generally speaking, activity in small buildings is falling off, and that in large buildings being maintained in the South of England, while in the North the opposite is the case. The shares of building material manufacturing concerns have fallen considerably in the past year, and in spite of a slight temporary recovery early in July, appear likely to fall still further. It would appear that building activity is shifting its field of operations from that which it has cultivated during recent years. The movement is

not uniform. The ways in which this will affect the various classes of architectural practice is not yet clear, but there is no doubt that a reduction in the volume of work is taking place and that any increase must depend on an improvement in trade.

#### "THE SCOTTISH ARCHITECT AND BUILDER'S JOURNAL"

There is justice in the claim made by the editor of *The Scottish Architect*—of which the first issue has just been published—that the individual architect in Scotland fails to obtain his due share of attention from journals edited at a distance of 400 miles. English architects (and architectural journalists) commonly fail to realise how different from their own are the conditions under which their Scottish colleagues work. Consequently a journal devoted to the special interests of Scottish architecture is a commendable and promising venture. The first number contains illustrations of two buildings, a leading article by Colonel G. Gardner-McLean on the newly created Scottish Building Centre and articles on Garden Cities and Town Planning. The two latter are of special interest because the editor states his intention of dealing with the newer and wider aspects of architectural practice of which they are typical. The first of these two articles, "The Organisation Behind the Garden Cities Movement," by Mr. Gilbert McAllister, recalls the quite recent but largely forgotten history of what is now a world-wide movement. In "Tradition in Town Planning" Sir John Stirling-Maxwell [Hon. A.] chastises the unimaginative site planning of almost all municipal housing. If the editor, Mr. T. Warnett Kennedy, continues to publish such excellent articles as these, the success of *The Scottish Architect* will be assured.

#### C.P.R.E. CONFERENCE

The Eleventh National Conference of the Council for the Preservation of Rural England is to be held at Chester from 13 to 16 October. Three principal papers will be read and discussed. Professor R. G. Stapledon will speak on *Agriculture and the Countryside*, Mr. H. G. Strauss, M.P., on *The Approach to the Town (Unsettling Development, Advertisements, etc.)*, and the Rt. Hon. Lord Justice Scott on *National Planning*. A series of tours has been arranged, including one to Liverpool Housing Estates. The conference is open to all persons interested. Full particulars will be found under Notes in this number.

#### CATALOGUE

Members are asked to notice the order form for Volume II of the Catalogue. As a general note on this volume on page 982 of this JOURNAL suggests, there is no other catalogue of architectural books anywhere in the world that covers the range of architectural literature so thoroughly on both technical and historical sides. It is the biggest and best of its kind and it is potentially of enormous value to every sort and condition of architect or architectural student.



## ROBERT MAILLART

### THE ARCHITECTURE OF A GREAT SWISS ENGINEER

*By P. MORTON SHAND*

*Rossggraben Bridge, near Schwarzenburg (1932). 82 metres clear span*

Robert Maillart has probably built more concrete bridges (about forty in all), and has certainly transformed their structural design more profoundly, than any man yet born. It is, moreover, a direct consequence of the far-reaching modifications he introduced that a wholly new formal æsthetic in bridge-building is now emerging. As a result the kind of visual "object" the word bridge will evoke in the age we are entering upon is bound to be a radically different one to that which it pictured in the mind of any preceding generation. Maillart was also the originator of what, by no means accurately, we have grown accustomed to call Mushroom-Slab Construction; though in a far bolder, more logical and revolutionary form than is usually employed in Great Britain, where American practice has been rather blindly followed.

Born in 1872 at Berne, Maillart went to Zurich at eighteen to take a four years' course of engineering. His first professional experience was in railway construction: an invaluable apprenticeship to practical realism. In 1897 he was appointed assistant-engineer to the Highways Department of the Zurich City Council, and took up his duties at a moment when the chief engineer had been instructed to prepare plans for a new steel road bridge over the River Sihl. Unasked, Maillart immediately worked out a design of his own in reinforced

concrete. As this offered a saving of one-third of the original estimate he was allowed to carry it out and supervise the construction (Stauffacher-Brücke, completed 1899). That episode proved a foretaste of Maillart's whole career as a bridge-builder, for there has hardly been a single case where any other motive than sheer saving in cost compared with other projects influenced the acceptance of his designs. Æsthetically he was always regarded as the blackest of black sheep by municipal and cantonal authorities alike. He now decided to devote himself exclusively to reinforced-concrete engineering, then still very much in its infancy, and gave up his post in order to join a company that had begun to specialise in this method of construction. While in their employment he designed the first concrete bridge built with hollow-ribbed arches. This in itself represented an unprecedented departure, but the bridge in question was also the prototype of that whole class in which arch and platform are directly articulated together so as to constitute a structural as well as a monolithic entity.

In 1901 Maillart set up in business on his own as a public contractor. Among the first undertakings carried out by Maillart et Cie was a sanatorium at Davos for which the famous French engineer François Hennebique had designed the concrete shell. This collaboration is



*Tavanasa Bridge,  
Upper Rhine (1906).  
Clear span 51 metres*

not without historical significance for Maillart's contributions to concrete engineering may be said to begin at the point where Hennebique's left off. Hennebique adhered to a beam-and-post framework which reproduced the essentials of traditional timber construction, with the result that his floors remained inert slabs. Dr. Siegfried Giedion\* quotes Maillart's summing up of the position when his own career opened:—

"The engineer was so accustomed to use iron or timber, which only provide one-dimensional support, that designing in them had become second nature to him, and restrained him from exploiting other possibilities. This was the state of affairs when reinforced concrete was introduced, and for some time no change ensued."

The earliest notable structure designed as well as built by Maillart et Cie was a bridge over the Upper Rhine at Tavanasa in the Grisons (1906), of which there will be more to say later on.

Though the beam is a member inseparable from steel or timber construction, concrete can dispense with it because the reinforcement of a stiffened slab, being under initial tension, is able to provide active support as well as contributing to its own. It was this

momentous realisation that impelled Maillart to try to support floors with columns instead of on walls. A warehouse at Zurich he built in 1910 was the first example in Europe of Mushroom-Slab Construction: in respect of which his experiments were at least as early as, if not actually earlier than, those of the American engineer C. A. P. Turner, besides being conducted on entirely independent lines. In American Mushroom-Slab Construction the floor is reinforced by what amounts to a gridiron of beams diagonally imbedded in it, and intermediate slabs are introduced between the heads of the columns and the under surface of the slab that rests upon them. Maillart redistributed the reinforcement to give the floor a uniform bearing surface in all directions, capable of taking every kind of stress, and thus abolished the old differentiation of the supporting function as between length and breadth. Maillart's system is therefore the direct antithesis of American practice. The heavier the load a floor is called upon to bear the greater is the inducement to adopt his type. This explains why it is chiefly found in large multi-storied buildings with non-supporting walls, such as warehouses, depositories, and factories using heavy machinery. It is the properties peculiar to a uniformly stiffened concrete slab—the interplay and equipoise of invisible forces present in the floor itself—that constitute the basis of the Maillart system, not the characteristic shape of his trumpet-headed columns.

\* *Construction and Aesthetics*, an article published in *Circle*. Faber and Faber, 1937.

Probably the finest embodiment of Maillart's Beamless Flooring is the Federal Granary at Altdorf, built in 1912, where flights of octagonal columns are superimposed directly above one another floor by floor in progressively diminishing girth, massive as Norman crypt pillars in the basement and slender as Gothic clerestory groining in the attic. For perhaps the first time in the history of building head and shaft have been merged both in form and function; hence the need of a plinth disappears. Surely the abstract austerity with which these columns rise, the classic purity of their proportions, and the graceful fan-shaped corbelling of their capitals are as beautiful in their own way as those of any one of the Orders?

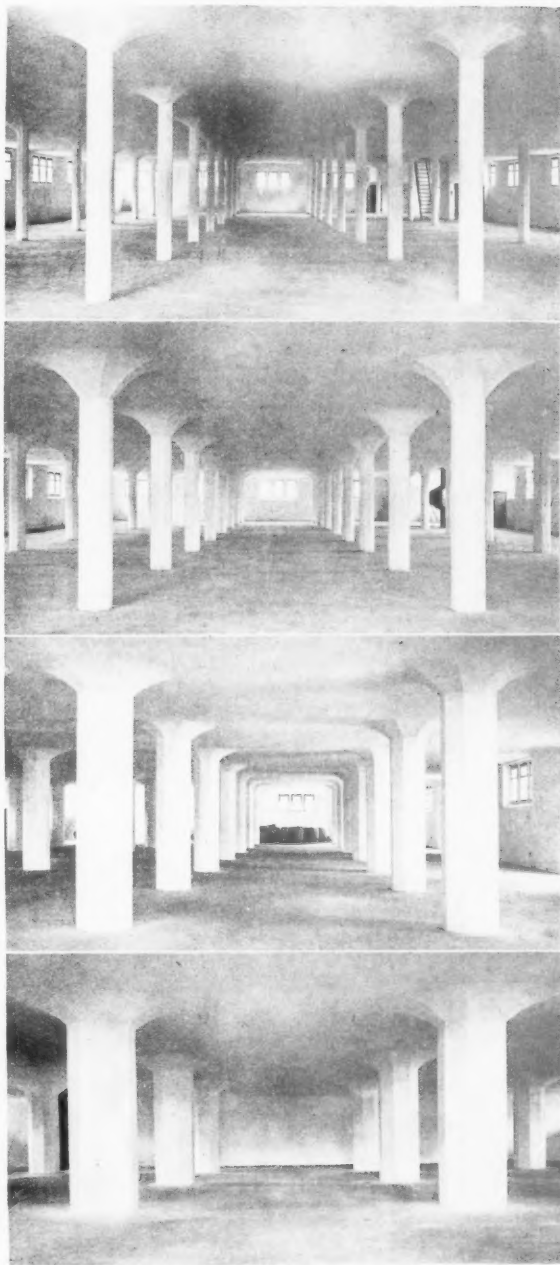
The practical and economic advantages of this system of construction led to many important contracts, not only in Switzerland, but also in Spain, France, and especially Russia. In fact, the firm soon had so much work on hand in the last country that Maillart transferred his headquarters there early in 1914. This compelled him to resign the lectureship in Reinforced-Concrete Engineering at the Federal Technical Institute in Zurich to which he had succeeded Professor Mörsch in 1912.

Overtaken by the War, Maillart was unable to leave Russia until 1919, and then only with the loss of his business and his entire personal fortune. But though his offices and plant were commandeered at the beginning of hostilities he carried out a big group of factories at Kharkov in 1916.

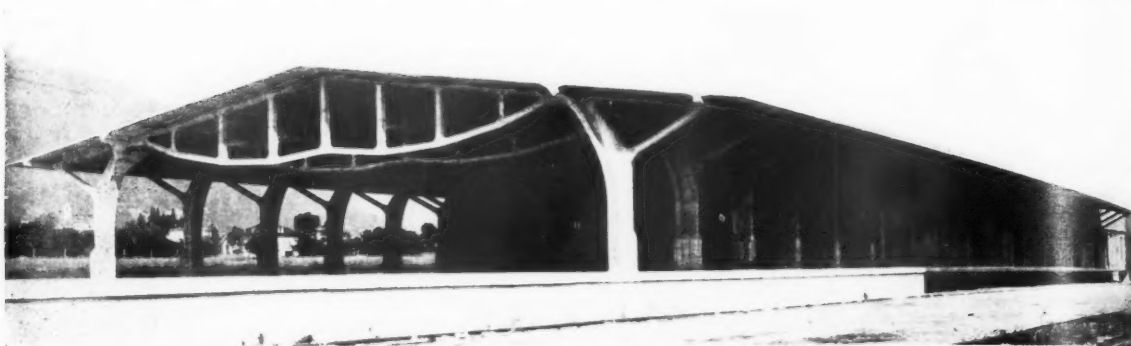
Consequently Maillart was unable to start afresh as a public contractor on his return to Switzerland, and therefore went into practice as a consulting engineer at Geneva, with branch offices in Zurich and Berne. In this capacity he has been responsible for the design of a long series of bridges in his native land which are distinguished by entire freedom from æsthetic bias and the avoidance of any formal emphasis on their means of support. It is no exaggeration to say they are the most remarkable of their size yet built in any country whatever.

Robert Maillart was elected an Honorary Member of the R.I.B.A. in 1937; the same year as his eminent French colleague Eugène Freyssinet. They were the first foreign engineers on whom the Institute has conferred this honour. Though Freyssinet has only built one bridge, the famous Pont Albert Louppe at Plougastel, near Brest, it embodies the three longest concrete spans in the world. What relates it to the subject of the present article is that each of its 612-foot parabolic arches is formed by a huge hollow rib with bulkhead divisions: a type of construction first used by Freyssinet in his well-known airship sheds at Orly (1916), but originally employed by Maillart for a small Swiss bridge some fifteen years earlier.

As has already been mentioned, the first bridge of Maillart's to evince marked originality was Tavanasa



Four of the six floors of the Federal Granary, Altdorf (1912)



*Customs and Bonded Warehouse at the frontier station of Chiasso, Swiss Federal Railways (1923-5)*

(51 metres clear span), finished in 1906; and it is a matter for keen regret that it should have been swept away by an avalanche in 1927. Here, as in several others of much the same type built by his firm in succeeding years, the complete slotting-out of the spandrels resulted in an appearance suggestive of a pair of metal skates placed toe to toe. Stripped bare of the last remnants of formal disguise, its construction is revealed as a thin slab, bent into an elliptical arch, joined to a horizontal one almost equally thin, which is the platform. Apart from the abutments their only articulation is a sort of incomplete membrane, like the scalloped webbing that unites the claws of a duck's foot, formed by parallel vertical slabs of an irregular shape. That is all.

As Dr. Giedion says, the forms of Maillart's bridges are always the result of logical resolution into their

basic elements by the elimination of all bulk not directly functional. Each, whatever the nature of its design, is informed by the same belief: that there is no more need for arch-ribs to be solid than for separate longitudinal beams to carry the platform.

At this time it was virtually impossible to gauge the forces present in a suitably stiffened slab of any given dimensions by calculation alone. Perhaps Maillart's greatest contribution to structural engineering is that he dared the risks of practical experiment beyond the limits then set by calculation in his buildings in order to determine these hitherto imponderable factors. It is significant that the Americans should have developed the stiffened slab into a flooring system of their own without ever attempting to employ it as a basis for bridge-construction.

"Flat and curved surfaces are here juxtaposed so as



*Valtschiel Bridge (1926). 43.20 metres clear span*



*Landquart Bridge (1930). On the Rhodan Railway at Klosters. 30 metres clear span*

*Salginatobel Bridge (1930). 92 metres clear span. "With its lean, athletic attenuation (the arch is under eight inches thick) and dynamically taut elasticity of form it has an air of serene inevitability; a little masterpiece of pellucid proportion and stern economy of material"*

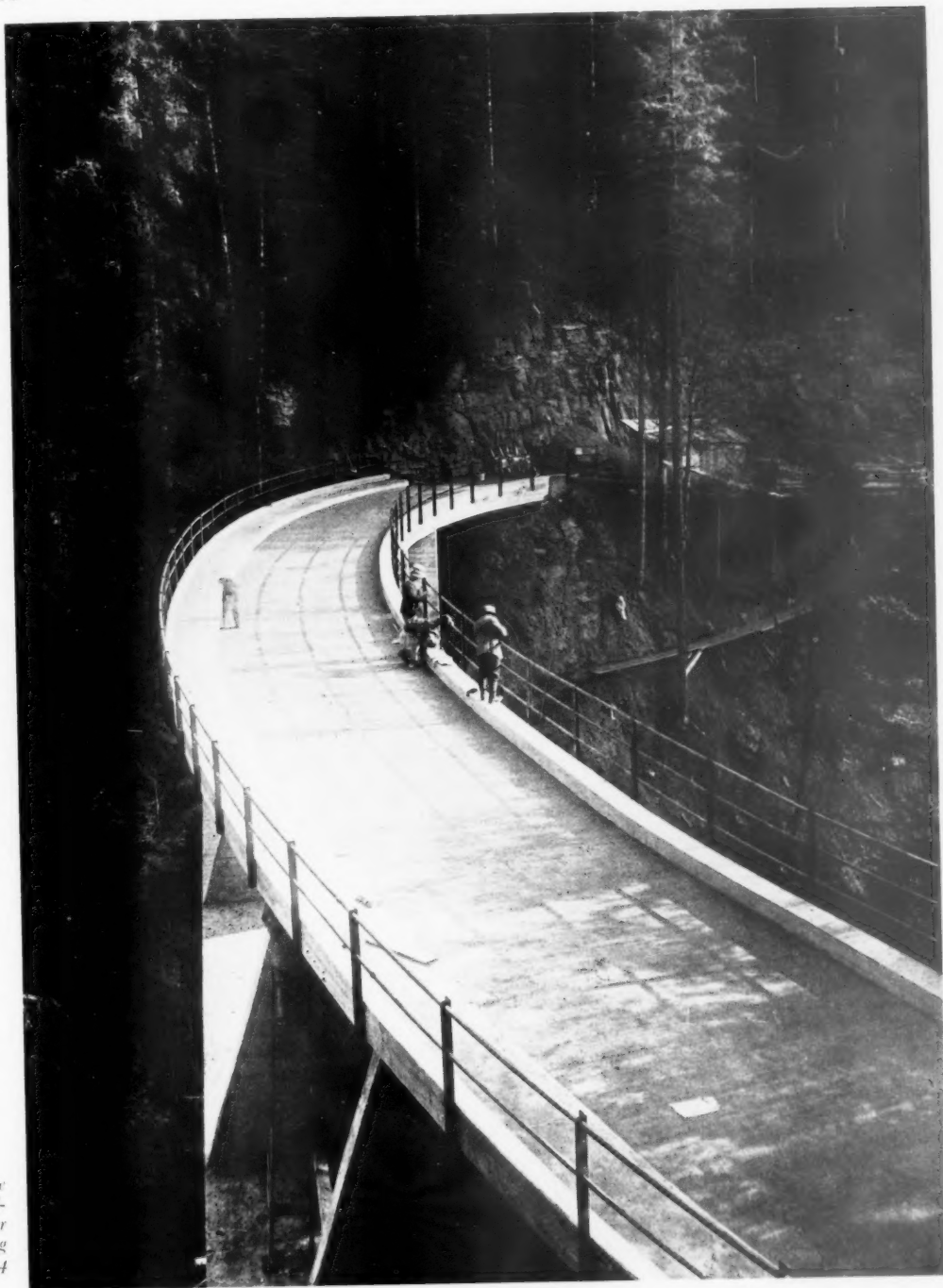




*Châtelard Aqueduct  
(1926). The piers  
are 30.44 metres  
apart*

*Below :  
Felsëgg Bridge over  
the River Thur  
(1933). 72 metres  
clear span*





Elliptical bridge  
over the Schwand-  
bach, near  
Schwarzenburg  
(1933). 37.4  
metres span



*Ladholz Bridge  
(1930), near Fruti-  
gen, 26 metres span,  
built in four weeks  
at a cost of approxi-  
mately £500*



*Rossgraben Bridge,  
near Schwarzenburg  
(1932). 82 metres  
clear span*



*Innerkirchen Bridge  
over the River Aare  
(1934). 30 metres  
clear span*

ridge  
Fruti-  
span,  
weeks  
proxi-  
oo



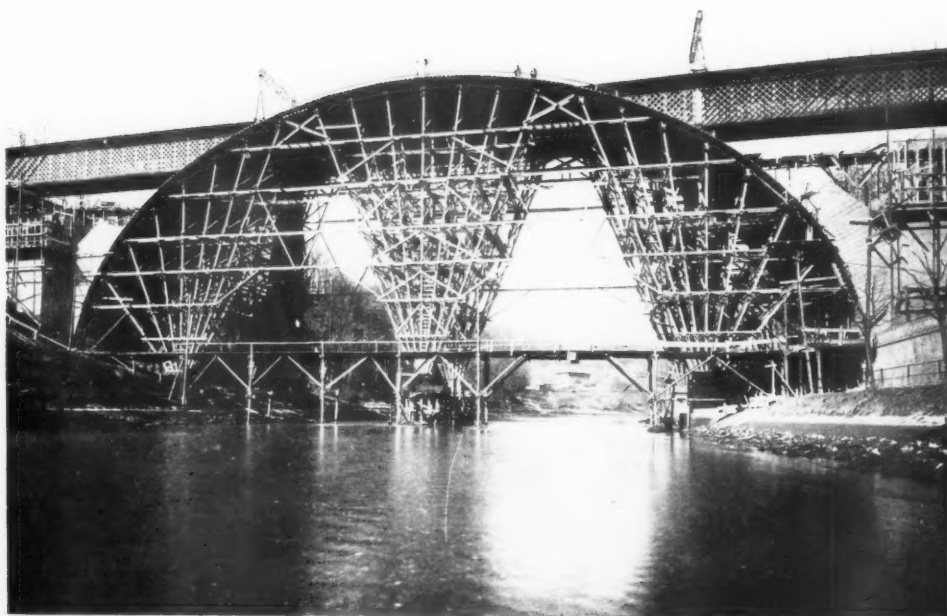
Footbridge at Töss-  
leg (1933). 40  
metres clear span

idge,  
urg  
tres



Bridge at Vessy over  
the River Arve (1937).  
36 metres clear span

e  
e  
s



*Left : Centering for the Lorraine Bridge, Berne, Switzerland. Below : The completed bridge (1930). 82 metres central span*



to achieve an almost uncanny balance of strains and stresses" is Dr. Giedion's description of the very neat Valtchiel Bridge (43.20 metres span). To the same year, 1926, belongs the enigmatic-looking Châtelard Aqueduct, the strut-like piers of which are 30.44 metres apart. The asymmetrical Salginatobel-Brücke (1930), of 92 metres—352 feet—clear span, in even more spectacular surroundings, represents a further step in his progressive clarification of structure. With its lean, athletic attenuation (the arch is under 8 inches thick) and dynamically taut elasticity of form it has an air of serene inevitability: a little masterpiece of pellucid proportion and stern economy of material.

The torsional strains that would have to be allowed for in a concrete bridge with a sickle-shaped platform had hitherto been held to defy computation. In the 30-metres wide polygonal-arched Landquart-Brücke (1930), which brings the Rhaetian Railway into Klosters on a curve of 125 metres radius, Maillart overcame the difficulty by making the platform wide enough to accommodate the ellipse described by the metals, and battering the outer face of the substructure to compensate the uneven stresses arising. The

Schwandbach-Brücke, of 37.4 metres span, near Schwarzenburg (1933), was, however, the first definite solution of the problem, for in it the whole structure, including the platform, is made to describe an ellipse.

With the Rossgraben Bridge of 82 metres clear span (1932), also near Schwarzenburg, a slight but important change occurs in the form of the arch. The just perceptibly ogival accentuation of the crown evinced here becomes still more pronounced in those at Felsegg and Vessy. Maillart explained the structural reasons for this formal modification when he challenged the design of the Lailour Bridge in a letter to the French engineering review, *Le Génie Civil*, that is reproduced a little further on. In the three-pin Innerkirchen-Brücke (1934), which crosses a turbulent upper reach of the River Aare on a 30-metre span at the lowest level compatible with safety from sudden spates, the peculiarly graceful ellipse of the arch is almost unbelievably flat. This bridge has a continuously eccentric line of thrust, and like the Schwandbach-Brücke is remarkable for having no separate decking slab: traffic being carried directly on the platform, which was given an extra 3 cms. thickness in consequence. The same eliminatory principle was taken even further in a flat-arched skew bridge, having a 22-metre central span, built in 1935 at a cost of under £2,200 by the Laufen Cement Works to carry a branch line over the River Birs, near Liesberg, where the rails are actually imbedded in the platform. Such an experiment could never have been carried out if the branch had not been a private one as the design was completely at variance with existing regulations. Indeed, the chief engineers of the Federal Railways roundly declared that the arch would collapse as soon as trains started to run over it. Maillart rather maliciously invited them to the official loading tests, for which he borrowed their heaviest type of locomotive, weighing 112 tons; and ran it backwards and forwards over the bridge at far higher speeds than would be possible when hauling trucks owing to the sharpness of the approaching curve. Batteries of recording instruments registered perfectly normal deflections and a degree of vibration less than a quarter of what adherence to the recognised formulae would have produced. It is rumoured that the Swiss Federal Railways are now engaged in modifying their by no means ultra-conservative standards in the light of this perhaps not altogether welcome demonstration of the suitability of concrete bridges for the fastest and heaviest traffic.

Another problem which Maillart must have solved with a certain homeric irony was the Lorraine-Brücke in Berne (1930), a very considerable undertaking that cost nearly £120,000. The design for this bridge had been settled by a competition held as far back as 1911. It discreetly echoed that of the classicised Nydeckbrücke, dating from 1844, about a mile higher up the River Aare; and was based on a central span

of 82 metres with two small round-headed side arches. Although the increased cost of stone after the war had forced the town council to envisage the substitution of concrete, it obstinately insisted that the externals of the original elevations must be rigidly adhered to. Maillart found a characteristically ingenious answer to this municipal conundrum by devising a system of interlocking concrete voussoirs that required only a comparatively light centering—in itself a singularly elegant design. A single vertebra of these blocks was first run across the middle line of the planked staging, and this was followed by parallel rows on either side until the arch was complete; thus the falsework had at no time to sustain more than a fraction of the total weight. No trace of this *ad hoc* construction is visible in the finished bridge because the piers, spandrels, and superstructure have been completely enclosed with thin concrete walls to imitate solid masonry. Illusion was further enhanced by religiously exposing a most carefully selected aggregate.

In none of Maillart's bridges is the direct supporting function of the slab when bent to an arch, or the amazingly shallow sectional depth which can suffice for the purpose, more immediately apparent than in a narrow foot-bridge of 40 metres span at Tössteg, near Winterthur, built in 1933. Being only accessible to pedestrians and cyclists, the load to be borne was too modest a one to justify the extra expense of flattening out its gradient. Thin and supple to the eye as a flexed sheet of plywood, the arch follows the lowest span that will give reasonable clearance for flood-waters,

Laufen Bridge, over the River Birs, near Liesberg (1935). 22 metres central span



and so close beneath the platform as to merge with the curve of its only slightly wider radius except at the ends. Something about the engaging sweep of this light-footed and gracefully tripping little bridge suggests that in the familiar Willow Pattern with its hump considerably reduced to help modern Chinese lovers to escape from irate fathers quicker and less breathlessly. It is a Bridge of Smiles, not of Sighs; the sort of large-scale toy a child would long to have for his very own.

Maillart's two most recent bridges—the Felsegg-Brücke over the River Thur on the main St. Gall-Zurich road, of 72 metres span (1933); and the Pont de Vessy over the River Arve, in a Geneva suburb curiously named Le Bout du Monde, of 56 metres span (1937)—have still to be considered. The latter was constructed by a building estate to enable it to exploit a number of villa-plots doubtless all the more desirable for being previously inaccessible; and the former to take the heaviest loads of modern motor-lorry traffic. Both are of the three-pin type and of very similar design. The Felsegg Bridge is perhaps the more imposingly monumental—"there are few contemporary buildings in which the solution of the structural problem approaches so closely to pure plastic expression" is how Dr. Giedion describes it—while that at Vessy is probably the more sympathetic; but each is a complete and optically satisfying solution of its own particular problem. To compare them with the bridges Maillart built over the Rhine at Laufenburg in 1911 and Rheinfelden in 1912 (in which he was made to cloak his structure with a skin of dressed stone and the olde-worlde trappings of mediævalised triangular piers) is to realise at a glance how far, if on the whole unwillingly, our generation has already travelled towards the rehabilitation of structural sincerity and a new kind of formal beauty in the course of a quarter of a century. But Maillart had first to survey and build that road for himself as a lonely pioneer. When he was sent the perspective of Sir E. Owen Williams's plan for rebuilding Waterloo Bridge his comment was: "I do not feel quite sure that circular piers are altogether sound, structurally speaking; though if I saw detail drawings I might change my opinion. But what an astonishingly elegant design it is!" Had his own evolution been less far-reaching he could never have made that remark, or written the defence of his engineering principles prompted by an article *Le Génie Civil* had published on 29 December 1934, describing the new Laifour Bridge over the River Meuse. As that letter traces his own æsthetic development as a designer with complete candour, and also provides several acid tests for distinguishing structurally logical bridges from those that merely wear modern dress, the present writer has welcomed the opportunity of reprinting it here in English:

"If we want to get the best out of reinforced concrete in bridge construction we inevitably arrive at forms

which are often quite different to those masonry forms we are accustomed to, and for that very reason prone to imitate. The difficulty of getting these new and unprecedented forms accepted, to say nothing of making them satisfy oneself, has impelled the engineer—and still more the architect called in to collaborate with him—to try to find ways of compromising between traditional and untraditional designs. This raises the question whether such a tendency is justifiable, and whether it would not be better to confine ourselves to forms deliberately based on purely structural principles.

Articulated bridges constructed with hollow ribs divided into a series of box compartments enable considerable economies to be effected, because, apart from the arch itself, both the platform and the spandrels directly contribute to the general resistance of the structure. Thus, the whole bridge, and not merely the principal part of it, forms the arch. As may be seen, in a bridge over the River Thur at Billwil, which I built in 1933, this type of construction can be made to give an appearance that differs very slightly from conventional forms. Here the only noticeable peculiarity is the extreme slenderness of the arches. But in retaining a definitely parabolic arch and solid spandrels certain structural drawbacks have to be faced, which become accentuated with increasing breadths of span. The mean curve of the stresses encountered, which is centred in proximity to the crown of the arch, becomes more and more eccentric in proportion as the springings are approached, because this curve closely follows the interior curve of the arch. In consequence, the platform ceases to provide any useful collaboration in the parts in question. In fact its participation becomes actually prejudicial, since tests made on bridges of this type reveal the presence of tractions towards the abutments. They are therefore far from achieving the ideal of a full utilisation of the material employed.

The realisation that as a link between the arch and the platform solid spandrels serve no useful purpose, except in the middle of the bridge, and that close to the abutments they exert a useless dead weight which is positively a potential danger, has led to the practice of slotting triangular cavities out of them. Once the corresponding part of the platform is freed from traction-strains in this way, the construction gains in straightforwardness, while the elimination of the useless bulk of infilling economises the amount of concrete required. I adopted this solution as early as 1905 in the Tavanasa Bridge. That, in spite of its obvious economy, this model was not followed can probably be explained by its somewhat 'unusual' appearance. It was not till 1930 that I had another opportunity to adopt a similar type of construction—and, as it so happened, for a bridge of much larger dimensions. Though in some quarters the Salgina Bridge called forth much the same objections as did its prototype, public taste had clearly progressed during the quarter of a century

which had elapsed; for the bridge was enthusiastically accepted by the population of the district it serves, and even technical circles were far less severe in their criticisms than they had been in 1905.

A certain resemblance is immediately apparent between the bridge just referred to and that over the River Meuse at Laifour, built in 1934. What really matters, however, are not their superficial similarities but their outstanding *differences*. The description of the latter, published in the *Génie Civil*, claimed that, from the æsthetic point of view, it "*preserves as nearly as possible the general lines we are accustomed to find in a bridge.*" In point of fact the thickness of its arch has been so much reduced at the haunches as to necessitate a framework of cross-braced vertical supports above them—an addition which could have been avoided by making full use of the available height—while on the other hand the thickness at the points of articulation is much greater than is required by structural exigencies. It need not be disputed that in giving his arch as constant a thickness as possible the designer tried to approximate to conventional forms. But was this necessary? And does the more structurally sincere design of the Salgina Bridge evince a marked inferiority in an æsthetic sense?

But even the latter cannot lay claim to complete sincerity of form. Indeed, if both constant and shifting weights are taken into consideration, the extreme curves of the pressures exerted form two lenticular surfaces whose lower contours meet at an acute angle.

The most rational shape of arch ought, therefore, to describe a similar lenticular contour, because this will assure the greatest uniformity in the imposition of strains—a form which logically presupposes the adoption of an ogival type of intrados. In the Salgina Bridge, however, the intrados has been rounded off under the crown of the arch in deference to traditional design.

It was only in the Bridge at Felsegg, built as recently as 1933, that I had the chance of realising a truly logical form. In this case the river crossing occurred on a highway built to carry the exceptional loads of heavy modern main-road traffic. There was, therefore, every inducement to employ the system of construction adopted to the fullest limits of its resources, and to be guided solely by structural considerations in the choice of it. Hence the decision to use a somewhat pointed form of arch. Though some people may find the form of this bridge unpleasing, the example of Gothic architecture (which employed the ogive purely for æsthetic effect and in direct opposition to static requirements) may be cited in the constructor's defence.

Compared with the powerful simplicity of the wide span of this Felsegg Bridge, the type of support usually adopted for approaches—a series of vertical columns cross-braced to each other—seems a rather paltry device. Inclined two-legged buttresses, suitably reinforced on top, were substituted for these because they assure good lateral stability and reduce the number of separate foundation-points required."



Robert Maillart : 1935



*The Master's Lodge, Downing College*

## A RECENTLY FOUND JAMES WYATT DESIGN

By GAVIN WALKLEY [A.]

Two drawings, acquired last year by the R.I.B.A., signed "James Wyatt Archt.," but with no title and no resemblance to any known building executed by that architect, were found to depict two slightly differing designs for Downing College, Cambridge. This discovery opens up a story of 130 years ago, of the days in which the fascination of the recent "discovery" of Greece caused an upheaval in prevailing English taste, and even covered Rome and Vitruvius with scorn.

The foundation and building of Downing College were achieved only after a series of delays, lawsuits, legal formalities, alterations of site, assessments of designs, and changes of architect in a seemingly endless succession.

When Sir George Downing<sup>1</sup>, Baronet, died on

10 June 1749, certain estates were left to his cousin Jacob Garret (or Garrard)<sup>2</sup> Downing, who died without issue in 1764.<sup>3</sup>

Other relatives entitled in remainder having also died without issue previous to this date, it was provided in Sir George Downing's will that the trustees should acquire land in Cambridge for the foundation of a college, "which college shall be called by the name of Downing's College."

But Lady Downing, widow of Sir Jacob, took possession of the estates on his death without any real title to them, and her opposition and, after her death, that of her nephew, Captain Whittington, with all the litigation involved, delayed the Royal Charter for more than 30 years. In the meantime, however, the heirs-at-law had been busy co-operating with the University

(1) Grandson of the first Sir George Downing, after whom Downing Street, London, is named. See J. Beresford: *The Godfather of Downing Street* (1925); and H. W. P. Stevens: *History of Downing College* (1899).

(2) *Dict. Nat. Biog.*

(3) Willis and Clark, *Architectural History of the Univ. of Camb.* ii, p. 755.

authorities in choosing a site. Evidently feeling confident of the ultimate outcome of the litigation then in progress, the promoters of the college had chosen their site by 1771, and appointed James Essex their architect.<sup>4</sup>

Essex died on 14 September 1784, and his designs for the proposed college, if he ever made any, were never used.<sup>5</sup>

A few weeks after his death we hear James Wyatt being spoken of as architect. In a letter dated 27 October 1784, Mr. Michael Lort, Fellow of Trinity College, observes: "... Mr. Ainsly<sup>6</sup> the new Mr. of Downing has been here to fix on a site for his new College, for, though many has been proposed to him, yet objections are made to all—Mr. Wyat the architect wishes much that it should be opposite to some of the colleges on the River, for then he thinks he shall not be cramped for Room, & may make four fine façades; but how will they here get access to, & communication with, the Town? ..."<sup>7</sup>

He also mentions that the King has recommended "that it may not be a Gothic building." The King's preference for the Classic style is at once explained when it is recalled that as Prince of Wales he had Sir William Chambers as a tutor.

In 1796 the heirs-at-law tried to purchase the open space known as Parker's Piece as the site for the college, and after the failure of their negotiations, came to an agreement with the town in 1798 to purchase Doll's Close, now known as New Square, provided the Charter of Incorporation, for which they had petitioned the Crown, was granted within three years.

The Charter was granted in June 1800, and the Doll's Close site became the property of the college.

As soon as the college had legal existence James Wyatt was formally appointed its architect.

We may suppose that he was largely instrumental in obtaining a fresh site for the college, for there is extant a report from him dated 2 June 1800 in which an estimate of the extent of the buildings required indicates the inadequacy of the Doll's Close site.<sup>8</sup> His report runs:

"The space required to accommodate A Master—Two Professors—Sixteen Fellows and from sixteen to twenty Undergraduates; with a Chapel, Library & Hall; Bursery, Muniment Room, Common Room Etc. Etc., will be abt two hundred and fifty feet square—The expence of wch according to the first Idea drawn cannot

be less than £60,000—The ornamental Parts will be near £10,000 of that Sum, but may be executed at leisure without any impediment to the habitation of the building—The habitable part may be executed without difficulty in four or five Years as the money may be advanced—To erect one Wing of the building and part of the front including the Gateway wch will contain the Masters Lodgings two Professors six fellows apartments and the Porters and to finish the Masters Lodgings the two Professors and those of the three fellows and the Porters will cost abt £20,000 and might be finished if great exertion was used in abt 3 years.

JAMES WYATT. June 2nd 1800."<sup>9</sup>

Whether this great plan, 250 feet square, was the cause or the result of the further change of site is not known, but there is a minute in the year 1800<sup>9</sup> which records that "It was resolved to apply for an Act of Parliament for . . . changing the Scite of the College, and for providing a Fund for Building the same."

And later in the same year "It was determined that the most desirable situation for the College would be the Pembroke Leys."

It is sufficiently amusing to note that this is the same site that was originally decided upon in Essex's time, 29 years before.<sup>10</sup> Throughout the years 1801-3 negotiations for the purchase of Pembroke Leys proceeded, and were concluded in 1804.

In the Architectural Publications Society's Dictionary, Wyatt Papworth gives 1784 as the date of James Wyatt's designs for the college.

He had certainly prepared two designs by the beginning of 1804, for it was in February of that year that the Master decided to submit them to the criticism of his friend, Mr. Thomas Hope.

Hope was a man of many attainments. He was born 1770, the eldest son of a rich Amsterdam merchant. As a student of architecture, he travelled for eight years in Europe and the Levant; he wrote a novel, *Anastasis*, which is said to have excited the admiration of Byron, and he purchased a collection of Greek vases made by Sir William Hamilton, the British Ambassador at Naples.<sup>11</sup> He was elected a member of the Society of Dilettanti in 1800, and appears to have rapidly acquired a reputation as an authority on architecture and furniture design.<sup>12</sup>

The ardent love of Greece and her arts which led to the purchase of the Hamilton Vases appears to have developed into a blind unreasoning admiration for

[4] Willis and Clark, ii. p. 756.

[5] There are no Essex designs in the possession of the College, and since the College Minutes run only from 1800, the year of the Charter, we are left without clue.

[6] Francis Annesley, Esq., M.P., First Master of Downing.

[7] Quoted by Willis and Clark, ii, p. 756-7.

[8] The extent of Doll's Close was 1 acre, 1 rood, Willis and Clark, p. 759.

B\*

(\*) This MS. is in the possession of the College.

(9) The minutes for the first six years were not entered as they occurred, but at a subsequent date, and are simply under the heading of each year.

(10) Willis and Clark, ii, p. 756.

(11) *The Hope Vases*, by E. M. W. Tillyard: Introduction, p. 1.

(12) "The Man of chairs and tables, the gentleman of sofas." [Sydney Smith in the *Edinburgh Review*, 1821, XXXV, 92 ff.]

anything Greek. At any rate, his passion led to a narrow outlook on Roman architecture surprising in one so widely educated. In Mr. Hope's view, the Roman use of the Orders was not merely a degraded architecture but a prostitution of the revered principles of a sublime art.

And a reference to his *Historical Essay on Architecture*,<sup>13</sup> written in the last years of his life, will show that his attitude remained unaltered to his death in 1839.

No great value can therefore be attached to his criticism on stylistic grounds, since James Wyatt's design, using a Roman Order, was predestined to condemnation.

His report<sup>14</sup> is, however, worth quoting here because of the influence it wielded in the shaping of the design ultimately adopted.

It is at this point that William Wilkins<sup>15</sup> comes into the story. Hope's partisanship is thinly veiled; indeed, he actually mentions him by name at one point in the letter in such a way that it is clear he must at least have been in communication with him since his return from Greece. Wilkins had been in that country, as well as Italy and Sicily, studying the Greek antiquities for about three years. He was a member of Caius College, Cambridge, where, before he went abroad, he distinguished himself in the Mathematical Tripos, and was elected to a Fellowship of his college shortly before his return. It is not difficult to imagine that Hope's academic tastes would at once respond to the appeal of such talents as Wilkins possessed.

Bearing this in mind, one is at once struck by the fact that Wilkins's design is continually appearing between the lines—and sometimes unmistakably in the lines—of Mr. Hope's report.

These pleas by a champion of the Greek cause could be said to favour equally any other Neo-Greek architect of the day, but the reference, already noticed, to Wilkins in his letter, and from Wilkins's election soon afterwards to that select coterie, the Society of Dilettanti,<sup>16</sup> of which Mr. Hope was a prominent member, one may excusably guess that it was Wilkins whom Hope wished to see as the architect of Downing.

It is unfortunate that very little idea of Wyatt's designs<sup>17</sup> can be gained from the Hope letter. All that

can be gathered in a general way is that one design is bigger than the other; and even this is difficult to reconcile with the two designs here reproduced. As far as one can tell by viewing the building from two different aspects, there appears to be no dissimilarity in the plans. The only immediately observable difference is in the tower and dome. This would lead one to believe that our two perspectives depict only one design; save that the tower and dome have been simplified in one case, possibly following Mr. Hope's strong views on the "four huge flower pots."

From a few slender clues<sup>18</sup> it is possible to reconstruct the plan of the other design as a three-sided court open at the south. The north façade was common to both designs.<sup>19</sup>

Though the letter to Mr. Annesley claims to be "Observations on the Plans and elevations, etc. . . ." Hope prefers not to bore Mr. Annesley with the question of the plans: ". . . as a simple description, unassisted by drawings, of the improvement of which the plan might be susceptible would only convey confused ideas, I shall not, my dear Sir, detain you with the same; and pass over at once to the elevations."

He strongly disclaims any suggestion of prejudice for one style or another, but ventures to say that he "could wish, instead of that spurious order which a nation, more versed in the Arts of war and politics than in those of beauty, chose to call Doric, notwithstanding no example of the same be discoverable among the Greeks, that legitimate order had been introduced, which alone was acknowledged as theirs, by all the nations of Doric race." The real Doric is "a body in its youth and vigour, full of sap and substance; . . . the other, on the contrary, is a body in a deep decline, where bones, joints, tendons, cartilages, and muscles, arteries and veins, destroy at every inch the smoothness of the surface."

While defending the absence of a base to Greek Doric columns, he says that "should the deficiency of this member . . . appear an insuperable objection . . . a base may be added and still all the other so much superior proportions of Grecian Doric be faithfully preserved."

He mentions that Mr. Wilkins has lately brought home some drawings which provide an authentic precedent for this.<sup>20</sup>

Lest we should think from this that he will tolerate nothing but Doric, he sets his seal of approval, as it were in advance, on the Ionic porticoes which Wilkins was to design later in the same year. But his approval

(13) Chap. VIII, p. 49, *et seq.*

(14) *Observations on the Plans and Elevations designed by James Wyatt, Architect, for Downing College, Camb.; in a letter to Francis Annesley, Esq., M.P.*, by Thomas Hope, 1804.

(15) 1778-1839; See Prof. Pite's paper in R.I.B.A. *Jnl.*, 24 Dec. 1932.

(16) *History of the Society of Dilettanti*, Ed. by Sir Sidney Colvin.

(17) None of James Wyatt's plans can be found. A. T. Bolton in his *Portrait of Soane*, p. 109, 110, shows that they had been handed over to his nephew, Sir Jeffrey Wyatville, by the Downing authorities when Soane made enquiries about them after Wyatt's death in 1813.

(18) *Observations*, p. 30.

(19) *Ibid.*, p. 29.

(20) The Temple of "Minerva" at Syracuse. See *Magna Graecia* by W. Wilkins, Chap. 2, Plate 6. The original *Magna Graecia* drawings are in the R.I.B.A. library.

is stated at the expense of poor Wyatt, whose Chapel portico—"this pseudo Doric"—calls forth Mr. Hope's deepest scorn: "... were I at least able to obtain that the Ionic, of a later, but still of a Grecian origin, might be preferred to a bastard order, of a most obscure birth not only, but of a most doubtful existence!"

Mr. Hope now proceeds to some comments on the south elevation "of the more extended plan," which we may suppose to refer to the perspectives reproduced. "Its centre is not only most important, as forming the centre of the whole building, but as immediately presenting that portion of it destined to the highest purposes—the chapel."

Because of "the extent of the façade, which disables the sight from embracing in unison all the symmetry of the distant lateral parts . . . it ought, above all, to exhibit less shallowness of projection, and less scantiness of columns."

"A portico thus constructed, . . . fulfils its apparent destination, that of affording shelter to the traveller, and"—[touching picture of the undergraduate of Mr. Hope's imagination]—"screening the inhabitant waiting for the hour of prayer from the inclemency of the weather."

The tower, reminiscent in a general way of the Radcliffe Observatory (1786), shows Wyatt in his more "Adam" manner, a fact which alone would serve to displease Mr. Hope. "No partial alterations could bring it within the reach of my ideas of taste and of elegance. . . . What an elegant cupola might be introduced in the place of his non-descript!"

It would be tedious to mention all Mr. Hope's complaints, embracing, as they do, the pilasters—"All pilasters I would proscribe without remission"—the lack of a plinth, the entrance gateway, and the fenestration. The pamphlet concludes by roundly condemning the designs as "trite, common place, nay, often vulgar." "I should be grieved," he says, "grieved to the heart, to see such a pile arise as . . . I am loth to conclude the sentence!"

If we accept Mr. Wyatt Papworth's date for the designs, it will seem to us a little unfair that James Wyatt should be loaded with such bitter criticism for a design he made 20 years before.

At the time of the Hope pamphlet (1804), Wyatt was being drawn towards the Greek Revival, as can be seen at Doddington, Gloucestershire (1802), and a design for Downing in this manner would certainly have drawn a much less devastating report from Hope.

Nevertheless, Wyatt had his supporters, and one of them, perhaps a member of his office staff, published a poem called "Hope's Garland" a month or two after the letter to Mr. Annesley appeared.

The following is taken from the copy at the Soane Museum<sup>21</sup> :—

"Lo Tommy Hope, beyond conjecture,  
Sits Judge Supreme of Architecture;  
Contracts his brows, and with a fiat,  
Blights the fair fame of classic Wyatt,  
And gravely proves himself is able  
To form a Palace very like—a Stable.

Tommy to no man holds a candle;  
He knows a cornice, moulding, spandle;  
Despises Porticos, and Niches;  
Displays a mine of mental riches;  
And to support his scientific strictures,  
Bids us behold his furniture and fixtures.

Tommy, a child, Vitruvius noted;  
Transcribed Pausanias, Euclid quoted:  
Maturer grown, sustain'd privations;  
Scan'd men and things, and distant nations;  
In Flanders skated when the sky was murky,  
And bared his limbs, and whiskers wore in Turkey.

Disdaining to bestride his hobby,  
In closet, parlour, hall, or lobby,  
In eight years hardships, toils and dangers,  
'Midst attic friends and Tartar strangers,  
With depth of purse, with parts and person active,  
He rovd—till roving ceas'd to be attractive.

Then who shall dare to doubt his knowledge  
In framing plans to grace a College?  
Or taunt him, under Candour's banners,  
Of both ill nature and ill manners?  
Wisdom forbid! for, to our taste's salvation,  
Tommy shines forth the Phœbus of the nation.

Fam'd for fine festivals and feeding,  
Fine thoughts, fine language, and fine breeding,  
This man of men, this world's prime wonder,  
Wielding his pen as Jove wields thunder,  
With unassuming Merit proudly quarrels,  
And adds new wreaths to all his former laurels!!!

Dioganetto."

Despite the damaging report from Hope, the Wyatt design, with an estimate, was laid before a Master in Chancery<sup>22</sup>; but very probably it was accompanied by the letter, or an opinion from Mr. Annesley based on it, because the Master in Chancery required a second design to be submitted, "... in consequence of which a second plan and estimate were made by Mr. James Byfield<sup>23</sup>; Architect; and other plans and estimates were afterwards voluntarily made and offered to the

(21) Hope sent Sir John Soane a copy of his *Observations* with a covering letter dated 7 April 1804. *The Portrait of Sir J. Soane* by A. T. Bolton, p. 109-110. Soane made a few notes in the margin, but nothing concerning the designs. The copy of *Hope's Garland* is bound up with the *Observations*.

(22) Willis and Clark, ii, p. 760.

(23) The College Minutes for 1804 from which this passage was taken by Willis and Clark also says Mr. James Byfield, but it is evidently a mistake for George Byfield, 8 sheets of whose design are in the possession of the College and are signed "G. Byfield, Craven St. 1804."

College by Mr. William Wilkins, Junr. Fellow of Caius College and Architect, and by Mr. Francis Sandys<sup>24</sup> and Mr. Lewis Wyatt<sup>25</sup> Architects. These plans and estimates being submitted to the College at different Meetings and to the Master in Chancery, that of Mr. Wilkins was ultimately approved and ordered to be carried into execution."

For reasons which remain obscure, the Court's order was not immediately carried out.

Byfield's was in the main a well conceived design. In the compactness of its plan, and the proportions of its several parts, it appears to be much superior to Lewis Wyatt's. It is, therefore, with some surprise that we find Lewis Wyatt's was thought to be the better, for in 1806 the Court of Chancery ordered the designs of Wilkins and Lewis Wyatt to be submitted to the judgment of three architects, Mr. George Dance, Mr. J. Lewis, and Mr. Samuel Pepys Cockerell.<sup>26</sup>

An examination of Lewis Wyatt's design reveals what may be an amusing repercussion from the Hope report.

There are no purely elevational drawings, but there is a section on a north-south line through the Chapel which also shows an elevation of the east side of the square court.

A Roman Doric Order is very crudely used in this elevation to give emphasis to its centre, but the interior of the Chapel is finely worked out in a style reminiscent of James Wyatt at his best. Crudity and refinement are at once observable in the same drawing, suggesting the work of two people.

One finds that Lewis Wyatt was 17 years of age at the time his design was submitted, and, moreover, that it was "voluntarily made and offered to the College."

Is it possible that James Wyatt was behind his

nephew's design? Did this successful and popular architect, very naturally annoyed by the publication of Hope's letter, see in his nephew a possible means of confounding Mr. Hope after all? He was the King's Architect, in the year of his Presidency of the Royal Academy, and the desire to win his point would be strong. His own design, it is true, was still before a Master in Chancery, but in view of the request for another design (Mr. Byfield's) to be submitted, perhaps he realised that his own design would be (or had been) rejected.

Whether or no the uncle had a hand in his nephew's design, it was decided by the referees<sup>27</sup> that the Wilkins design "combines more advantages than that of Mr. Lewis Wyatt, and is therefore as we are unanimously of the Opinion to be preferred as upon the whole the most fit and proper."

A minute dated 27 November 1806 records that the Master and Fellows decided in the same year to proceed with "such part of the Buildings of the College as shall serve for the Residence of the present Members."

The first stone was laid on Monday, 18 May 1807.

If there is anyone who regrets that the Wyatt design was not used, let him derive some satisfaction from the realisation that he was beaten, not necessarily by a better design, but by a change of taste. Thomas Hope was simply the instrument of the new movement, which was gaining strength so rapidly that even such admirable projects as Wyatt's were swept aside by it. And more than this, a college belonging to an ancient University was ideally fertile ground for the planting of a style that was essentially of academic interest. Equally natural was a preference for an architect who was also a scholar of more than ordinary merit.

Wherever one's tastes lie, it is impossible to look at the college to-day and deny the fitness of its quiet distinction and simple dignity.

*The writer wishes to acknowledge with thanks the courtesy of the Master and Fellows of Downing College in allowing him access to the College muniments; also J. Grantham Esq., M.A., Bursar; and W. L. Cuttle Esq., M.A., Dean and Librarian, for assistance and criticism.*

(27) Report dated 26 March 1806 in possession of Downing College.

(24) The design by Sandys has not been preserved at Downing.

(25) Five sheets of Lewis Wyatt's design are in the possession of the College. They are signed "Lewis, Wyatt Archt., Decr. 9th, 1805."

(26) The copy of their report in the possession of the College is not the original. Cockerell's signature has been copied as "J. P. Cockerell," but this is doubtless meant to be S. P. Cockerell, and not his son, C. R. Cockerell, as Prof. Pite says in his Paper to the R.I.B.A. (*Jul.*, 24 Dec. 1932), since C. R. Cockerell would be only 18 years old in 1806.



## Architectural Copyright

*Some months ago the Council authorised the Practice Committee to obtain an authoritative and up-to-date Opinion on the question of architectural copyright from Mr. K. E. Shelley, K.C.*

*With the assistance of the Institute Solicitor a case was formulated for submission to Mr. Shelley, who has now submitted his Opinion.*

*On the recommendation of the Practice Committee the Opinion is published below for the information of members :—*

### OPINION

Much of the confusion that exists with regard to the law of copyright as applicable to architecture is due to the attempt to extract principles of law from decided cases, in which all kinds of ingenious but unsound arguments may have been put forward, instead of concentrating on the Copyright Act, 1911, itself, and regarding decided cases merely as instances where the general law as laid down by the Act has been applied to particular cases.

The Copyright Act provides that :—

1. Copyright subsists in, among other things, every original literary and artistic work. "Literary work" is defined so as to include maps, charts, plans, tables and compilations. "Artistic work" is defined so as to include "any building or structure having an artistic character or design, in respect of such character or design, or any model for such building or structure, provided that the protection afforded by this Act shall be confined to the artistic character and design and shall not extend to processes or methods of construction."

2. The owner of the copyright is the author, i.e., in the case of architectural works, the architect, unless he is in the employment of some other person under a contract of service and the work is made in the course of his employment. In that case, unless there is an agreement to the contrary, the employer is the owner of the copyright.

3. Copyright is infringed if the work or any substantial part of it is produced or reproduced in any material form whatsoever, without the consent of the owner of the copyright.

"Original" means merely that the work must be the product of the brain of the author and not a mere copy of some already existing work. In order to secure protection the work need not be novel in actual fact. In this respect the Law of Copyright differs from the Law of Registered Designs, for a Registered Design is rendered invalid if it can be shown that the design was old, even if this fact was entirely unknown to the author.

The above three propositions of law, if properly understood, are sufficient to decide practically every conundrum that arises in connection with architectural copyright. To take a few concrete cases :—

A. OWNERSHIP OF COPYRIGHT.—The R.I.B.A. conditions expressly provide that the copyright shall remain in the architect. This is in accordance with the general law which would apply if there was no express agreement about copyright. Accordingly an architect who

is employed in the ordinary way for a particular building is the first owner of the copyright, whether the contract mentions copyright or not. It is possible (though unusual) for an employer to insist on a special clause in the agreement, whereby the architect is compelled to assign the copyright to the employer. Apart from such a special arrangement the copyright remains in the architect. If, however, he is a salaried servant, the position is reversed. In that case the copyright automatically vests wholly in the employer, subject to any special agreement that may have been made about it.

B. INDORSEMENT OF THE WORD "COPYRIGHT."—As a matter of law it is irrelevant whether an architect endorses plans prepared by him with the word "copyright," but by doing so he may prevent their being copied by someone who might otherwise do so in ignorance of the law.

C. ROUTINE WORK—ABSENCE OF NOVELTY OR ARTISTIC QUALITY.—If an architect is told to design, e.g., a garage, and is given particulars of the site, the accommodation required, the workshop facilities necessary and all other details and is further told that the building must be made as simple and as cheap as possible, it is probable that there is very little scope for any originality or display of artistic ability, since practically every detail is fixed by commercial and utilitarian requirements. Nevertheless there would be full copyright in the plans and if these were copied, or if a building was made from them, without the consent of the owner of the copyright, that would constitute an infringement. If a building is constructed substantially in accordance with previously prepared plans, there is no separate copyright in the building itself, for it is not an original work, but a mere embodiment of the plans. Since there is copyright in plans, even if they are wholly devoid of artistic merit, the fact that the building erected from them has no artistic merit is quite irrelevant to the question of copyright. The copying of the building can be restrained because it would be an infringement of the copyright in the plan. But if a building or structure is put up without plans, it has copyright only if it has an "artistic character or design." Thus an ordinary hoarding would be a structure, but would not be the subject-matter of copyright. But a decorative hoarding designed

and erected without the use of a plan would be the subject of copyright in so far as its decorative features were concerned. Of course no mechanical principle or system of construction can be the subject of copyright, but must be protected by patents.

In the recent case of *Chabot v. Davies* a design for a shop front was held to be infringed by the erection of a shop front made from a tracing of the design. This case is a straightforward application of the above general principles and is certainly rightly decided.

Anyone seeing a design for a shop front before it is erected in a public place and sketching it without permission would be infringing the copyright in the original design. After the shop front has been erected in a public place it is not an infringement to make or publish sketches or photographs of it unless these are in the nature of architectural drawings or plans. But the making without permission of another shop front copied or derived from the first would be an infringement in either case.

**D. REPETITION.**—If an owner of land has had erected on part of it a cottage designed by an architect under a contract either in the R.I.B.A. Form, or making no reference to the copyright, he cannot build further cottages on the same plan without the permission of the architect, even if the plans are in his possession and belong to him as documents. If a factory owner builds half his factory with the help of an architect and then employs another architect, whom he instructs to complete the factory by following the plans of his predecessor, both the factory owner and the second architect would infringe the first architect's copyright if this were done without the first architect's consent. In this respect the law is extremely favourable to the author. Thus if the first architect knew that he was only employed for one wing of the factory, which alone was to be built originally, but also knew that it was the factory owner's intention to complete the other wing at an early date, provided he did not expressly or impliedly give permission for his work to be copied, he could, as a matter of law, insist on the factory owner either paying any sum he chose to name for permission to repeat his design, or changing the design altogether for the other wing. There is no means by which a copyright owner can be compelled to give his consent to the use of his work if he does not wish to do so.

**E. INCOMPLETED WORK, DISMISSAL OR DEATH.**—Three periods have to be considered :—

- (i) The period between the receipt of the first instructions and the time when detailed plans, sufficient to obtain tenders, are completed, at which point the architect becomes entitled under the R.I.B.A. Scale to two-thirds of the full fee.
- (ii) The period from this point to the signing of the contract with the builders.
- (iii) The period after the building contract is signed.

In period (i), if the employment ceases at the wish of the employer, the architect is entitled only to a *quantum meruit* fee, which need not necessarily bear any relation to the ordinary scale fee for the completed work. Accordingly there is no reason to imply any licence by the architect to the employer to use his copyright. Therefore the employer would not be entitled to utilise the preliminary sketches or plans for the purpose of erecting any building, although the sketches and plans, as physical documents, might belong to the employers as pointed out hereafter.

If the employer engages another architect, who subsequently prepares plans which without permission reproduce to a substantial extent the plans submitted by the first, both the new plans and any building erected therefrom are infringements. In such a case it would be most unwise for the second architect even to look at the first architect's plans, for, if he did, any similarity would almost certainly be attributed to copying. But if the second architect prepares his plans without ever seeing the first plans, the fact that there may be a large measure of similarity is immaterial, for this must then necessarily be due to his having independently arrived at a similar solution.

If the employer desires to continue the employment of the architect, the latter would not be entitled capriciously to refuse and thereby deprive the employer of the right to use the plans for the building or scheme actually contemplated. There would be an implied licence to the employer to use all plans so far made, so long as the employer was prepared to continue to employ the architect. If it is the architect who is unwilling or unable to act the employer would be entitled to employ another architect to complete the plans and the erection, and the first architect could not successfully claim damages for infringement of copyright in respect of that particular building or scheme.

In period (iii), there is an implied licence to the employer to continue to use the plans even though the employment of the architect comes to an end, whatever may be the reason for such determination. Accordingly in no circumstances can either he or his executors prevent the completion of the building or the use of the plans for that purpose.

The position as to copyright in period (ii) is more difficult. When the two-thirds fee becomes payable, an implied licence comes into being. If the employer or the architect thereafter determines the employment by reasonable notice under the provisions contained in the R.I.B.A. conditions, or similar provisions, the implied licence continues. If the project is postponed from time to time and ultimately dies in a somewhat indefinite manner, the presumption from the inactivity of both employer and architect is that notice to terminate the engagement has been given and accepted. In such a case the licence continues and the plans may be used

by the employer at any time thereafter for the building originally contemplated.

But if employer and architect definitely agree either that the plans shall not be used, or, nothing being said about the use of the plans, that the project shall be finally abandoned for all time, the implied licence is revoked and the employer is no longer entitled to use the plans.

The distinction may seem artificial, but it is not really so. In the former case, although the architect cannot withdraw the implied licence, he may say that the notice given is not reasonable and claim damages for wrongful dismissal. In the second case no question of reasonable notice arises. The architect accepts a cancellation of all future work there and then, and in consideration of this he withdraws (expressly or impliedly) the implied licence.

F. CONSULTANTS.—If a consultant architect is employed, e.g., to make suggestions with regard to an awkward site, and prepares rough sketches, these cannot be used as the basis of detailed plans without the consent of the consultant, who could restrain the preparation of plans embodying the substance of his rough sketches and the erection of any building in accordance therewith. Of course if the consultant were informed at the time when his fee was being arranged that it was the desire of the employer to utilise any suggestions that the consultant might be able to make, it would be presumed that the consultant took this into account when agreeing a fee and that therefore he impliedly gave consent to the use of any sketch he might submit. But if all that the consultant was asked to do was to make suggestions, nothing being said about using them, there would be no such implication of consent, because the employer might be approaching more than one consultant, with no fixed intention of using, or paying for the right to use, the ideas of any of them until he had seen them all.

#### INFRINGEMENT.

In practically every case infringement is proved by showing such a similarity between the original work and the alleged infringement as cannot be explained by coincidence. But the alleged infringer may attempt to prove that he has independently produced his work, and, if he is believed, no infringement is established, notwithstanding any degree of similarity. In every case it is a question of fact, for a Court or Arbitrator to decide, whether there was copying or not. As pointed out above, similarity may be due to a particular problem receiving the same solution from two minds genuinely working independently upon the same data, or it may be due to borrowing from the same original sources.

It is no infringement of copyright, to make or publish paintings, drawings, engravings, or photographs, of any

buildings or structure, unless these are in the nature of architectural drawings or plans.

REMEDIES FOR INFRINGEMENT.—An injunction can be obtained to restrain any infringement that has not yet taken place, but once a building or other structure has been commenced, no injunction or order for demolition relating to that building can be obtained.

Damages for infringement are theoretically such as will compensate the copyright owner for the diminution in value of his copyright. In ordinary cases they would be assessed on the footing that the copyright owner had been employed instead of the infringer, upon the usual terms, in respect of the infringing part. Thus, suppose the infringement consists in copying the staircase design of a house, the remainder being admittedly independent work. If the total architect's fees for the house were £100, and if it was estimated that the staircase design was worth one-tenth of the whole, the damages would probably be assessed at £10. There would be no diminution by reason of the fact that the copyright owner had not supervised the work, as he would have had to do if he had been employed because he would not have been given the opportunity to do so.

Except in the case of a building or structure the Copyright Act, 1911, provides a further remedy, viz., the "conversion" of infringing copies. All infringing copies, e.g., of a book, are deemed to belong to the owner of the copyright and he can recover not only damages for infringement but also the actual value (i.e., the price to the public) of all copies of the book that have been sold. The latter claim can be enforced even against a person entirely ignorant of any infringement of the copyright, e.g., an innocent bookseller, who is not liable for damages for infringement.

In the case of an actual building or structure there is no such remedy by way of "conversion" of infringing copies. But if plans are wrongly multiplied there may be substantial damages under this head. For instance, if a journal publishes a set of plans without the author's consent, every copy of these is an infringing copy and is deemed to belong to the copyright owner, and he can recover damages from the publishers. If the selling price of the journal is 1s. per copy and the plans are estimated to be worth one-twelfth of the issue in which they appeared, the copyright owner would recover damages on the basis of 1d. per copy.

An action for infringement must be commenced within three years from the date of the infringement. In practice this means three years from the date of the completion of the building that constitutes the infringement.

K. E. SHELLEY

4 Brick Court,  
Temple  
3.6.38

## FIRE RESISTANCE

By J. SHAW, B.Sc., A.C.G.I., Assoc. M.Inst.C.E., A.M.I.Struct.E., of the Building Research Station

Crown Copyright Reserved

At the outset it is necessary to consider the difference between the terms "fire resistant" and "incombustible." If a wall or floor is fire resistant, it will prevent the spread of fire (for a time at least) from one side to the other. Its combustibility is another property altogether. Some combustible materials like thick timber attain a marked degree of fire resistance, whilst many incombustible materials fail in that they shatter or buckle under the effect of heat or get dangerously hot on the side remote from the fire. The point is raised here because of its importance, but it is considered more fully later in this article.

There are two ways of combating danger of fire. The first is the organisation of an efficient fire-fighting service. This covers such matters as the provision of a sprinkler system, a proper distribution of chemical extinguishers and other means of attacking the fire immediately it is discovered, means of escape for the occupants, a well-organised fire brigade, and, above all, a plentiful and handy supply of water. The second method consists in designing buildings in such a manner that a fire cannot spread beyond the compartment in which it originates.

The ideal building from the fire resistance point of view would be constructed of highly resistant walls and floors and would be subdivided into a large number of small rooms. All openings in walls and floors would be closed by equally resistant doors or shutters with provision to ensure that they were kept closed at all times when not under actual observation. It is obvious that such a building would be very uncomfortable to work in and very inconvenient for most of the industrial processes usually associated with buildings. Moreover, to attain a high degree of fire resistance the parts of the structure would tend to be heavy and uneconomical and many materials in common use to-day would not be admissible.

Clearly, a compromise has to be struck between the two methods—the organisation of fire-fighting services and the design of fire-resistant buildings. The latter can conveniently be considered under two heads:—

- (a) Degree of isolation and general layout.
- (b) Use of reasonably resistant "elements of structure" (i.e., walls, floors, columns, etc.).

The degree of isolation is usually dictated by considerations other than fire risk, but much can be done to minimise the spread of fire by a proper layout. The chief points of weakness in a building as regards the

propagation of fire exist in the window and door openings, in the projection of timber joists through, or partly through, the walls, in the holes formed in walls for the passage of pipes and cables and in the existence of large vertical openings such as lift shafts and light wells, which act as flues when once a fire is started. Cases are recorded of fires which, originating in a basement, have spread to the topmost storey via a ventilating shaft without breaking out on the intermediate floors.

The chief requirements as regards fire resistance in a building are, in order of importance:—

- (a) That time shall be allowed for the occupants to escape.
- (b) That the spread of fire to surrounding properties shall be prevented.
- (c) That the fire shall be localised in that part of the building where it originates.
- (d) That the damage to the building itself shall be a minimum.

The various requirements are, of course, all interdependent and the degree to which they are satisfied is dependent again upon the efficiency of the fire-fighting services. Local authorities concern themselves chiefly with the first two, which may be looked upon as the minimum requirements, whilst the amount of importance attached to the second two will vary according to the size of the building, the use to which it is put, the value of the contents and many other factors, including economic considerations of the capital cost of the structure.

Assuming that the usual form of fire-fighting services are available, it should be sufficient to localise a fire for a duration of time reasonably necessary for the evacuation of the occupants and the bringing into play of those services. This, as mentioned previously, is a compromise, and it breaks down immediately if early notice of the outbreak of fire is not obtained. For this reason, and also to allow for many other factors, it is necessary to be generous in estimating the degree of resistance required in any particular building. The relative positions occupied by different parts of a structure form another important consideration. Damage to a column at basement level, for instance, is likely to entail far more serious consequences than at top floor level. It might, therefore, be considered expedient to provide for a greater fire resistance in the lower storeys of a building.

Enough has been said to indicate the complex nature of the problem of rendering buildings fire resistant. In order to rationalise the position and to provide data for the design and grading of buildings attempts have been made in several countries, notably in America, Germany and Sweden, to provide a laboratory test of fire resistance. The problem is too complex to make it possible, in the present state of knowledge at all events, to derive practically useful results from small-scale tests on materials alone. The test, to be of direct practical value, must be on a representative element of structure in which various materials may be associated together. In all the tests so far devised, a full-size "element of structure" is exposed to a "standard fire" and some estimate of the time elapsing before failure takes place is noted.

In this country the subject of fire resistance testing was put on a clear basis for the first time by the publication in 1932 of *British Standard Definitions No. 476—Fire Resistance, Incombustibility and Non-inflammability of Building Materials and Structures*. Before that date some experimental work had been done by the British Fire Prevention Committee at a station at Regent's Park, London, by the Fire Offices' Committee at Cheetham Hill, Manchester and by the National Fire Brigades' Association in London. The terminology employed was, however, ill-defined and the value of the work was much reduced through the absence of an agreed common basis for the tests.

The British Standard Definitions supply specific definitions of the terms "fire resistance," "incombustible" and "non-inflammable," and specify the tests by which these properties may be measured. A test is also provided for estimating the suitability of materials for flues, furnace-casings, hearths and similar purposes.

The definition of fire resistance is here quoted in full. "The term fire resistance and its derivatives shall be applied to elements of structures only. The term fire resistance is a relative term used to designate that property by virtue of which an element of a structure, as a whole, functions satisfactorily for a specified period, whilst subjected to a prescribed heat influence and load." It should be noted particularly that the test prescribed for fire resistance is to be performed on "elements of structures" only. The other tests (for incombustibility, etc.) are tests on materials.

An "element of structure" is taken to mean some portion of a building such as a wall, beam, floor, column, door or window. The British Standard Definitions provide for the testing of these elements full size wherever possible, subject to the ruling that where the normal size exceeds 10 ft. a representative portion may be employed, e.g., 10 ft. square in the case of walls and floors, or 10 ft. long in the case of beams and columns. Several provisions are added to ensure that actual conditions of service shall be imitated as closely as possible in the test.

"Where the structure is ordinarily restrained in service the test structure shall be similarly restrained during test. . . ."

"Elements required to resist fire in one direction only shall be tested accordingly."

"The test structure shall be conditioned . . . in order that it may be brought to a state which reproduces . . . that likely to obtain in a building."

"In general, all structures which, in service, carry a load shall be tested while carrying  $1\frac{1}{2}$  times the design load."

The hazards applied to the specimen under test are three in number :—

(1) The specimen is exposed to the heat of a "standard" fire.

(2) Specimens representative of structures which, in service, carry no load (e.g., partition walls) are subjected to an impact test thirty minutes after the beginning of the fire test and also after the application of the water jet (described below). The impact is provided by a 10 lb. cast iron ball suspended on a chain. The ball is allowed to fall through a vertical distance of 1 ft. for each impact. This hazard is representative of the various shocks that may be produced in an actual building fire and prevents unduly weak structures from being admitted as fire resistant. The impact test is not applied to glazing.

(3) At the expiration of the period of heating the test structure is subjected to a water jet for one minute per hour of fire test. It is obvious that structures which would collapse under the first jet of water introduced into the burning compartment would be of little value from the fire resistance point of view. The practical difficulties of testing require that the water jet shall be applied at the termination of the test and not at intervals during the actual exposure to the fire. The definition provides that the water test shall be applied only to those structures which withstand the fire test for periods of two hours and more.

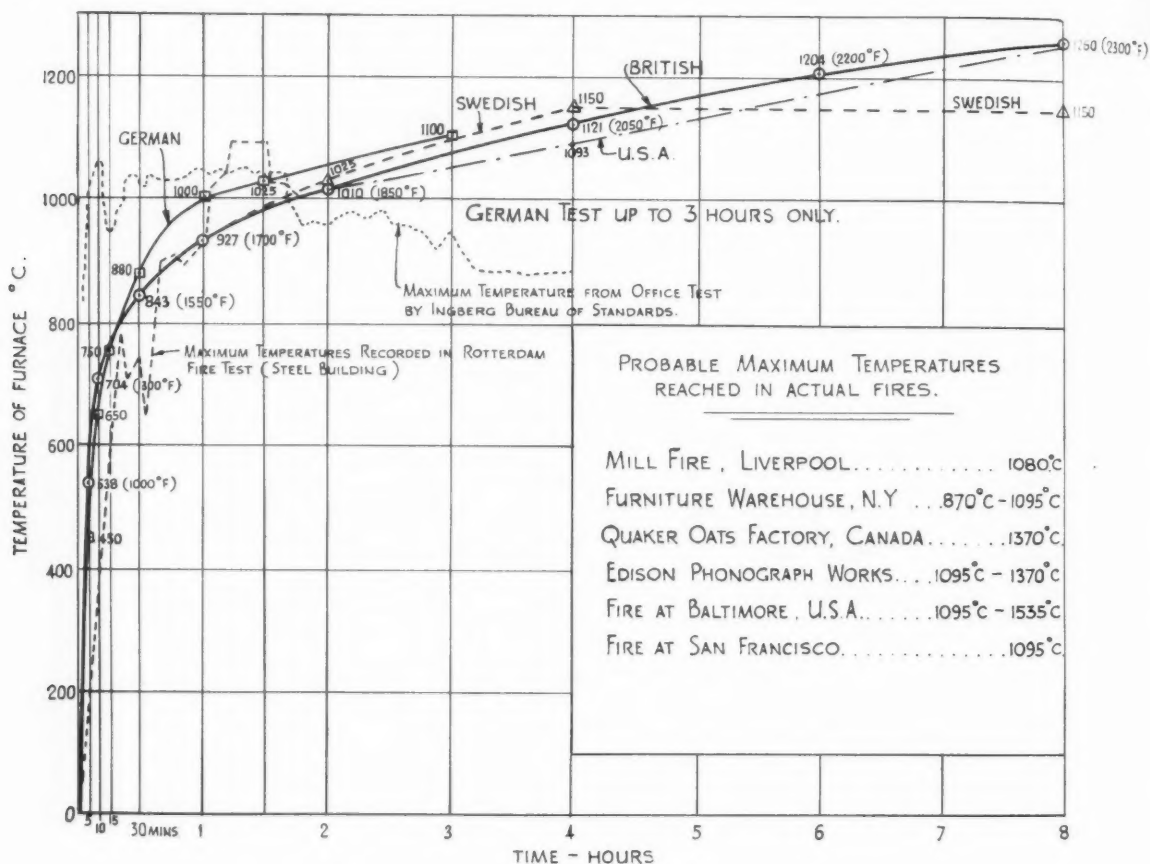
Structures are graded according to the length of time they withstand the fire test without failure. Failure, of course, must not take place under the impact and water tests where applicable. Five grades are recognised :—

Grade A—protection against fire for 6 hours.

"	B —	"	"	"	4 "
"	C —	"	"	"	2 "
"	D —	"	"	"	1 hour
"	E —	"	"	"	$\frac{1}{2}$ "

The criteria of failure fall under three heads :—

(i) The temperature on the unexposed face shall not increase at any time during the test by more than 250 deg. F. (139 deg. C.) above the initial temperature.



STANDARD TIME-TEMPERATURE CURVES AND OCCUPANCY TESTS.

(ii) Cracks, fissures or other orifices through which flame can pass shall not develop.

(iii) The structure shall remain rigid and not collapse.

Such structures as beams and columns which serve only the function of carrying loads have to satisfy only the third requirement, and the temperature criterion (No. (i)) may be waived in the case of iron and steel doors and shutters and glazing.

The criteria of failure are based on the principle that the structure, to attain a certain grade, shall resist the passage of fire for the appropriate time. Fire may be propagated either direct through cracks and

orifices in a wall or floor or by the surface of the structure remote from the fire becoming dangerously hot and igniting material stacked against it. The third requirement, as to the rigidity of the structure, is the most difficult to construe. Complete rigidity is impossible of attainment, and, when considering such units as beams and columns, possible damage to adjacent parts of the structure by even small movements has to be carefully considered.

The "standard fire" is fixed by reference to the time-temperature curve shown in the figure. The curves adopted by the Swedish, German and American investigators are plotted in the same figure for com-

parison. All the curves are very similar, the British following most closely to the American. All show a rapid rise in temperature during the first few minutes of test. The evidence on which the curves were based is necessarily slender and consists chiefly of observations of fused materials of known melting point in the ruins of actual building fires. Some of these are given in the inset to the figure. Tests were also made in Holland and the United States by setting fire to rooms filled with furniture and papers and other combustible materials representing a normal office occupancy. The results of these tests are also plotted in the figure. Recent observations made by officers of the Building Research Station at a London fire tend to confirm the previous evidence: temperatures up to 1240 deg. C. were recorded by means of an optical pyrometer.

The apparatus required for carrying out the large-scale tests required by the British Standard Definitions is necessarily expensive and of a special character. As the outcome of conferences between interested bodies, the Fire Offices' Committee undertook to provide a new station at Boreham Wood,\* near London, where testing in accordance with the definitions could be carried out as well as work on sprinklers, extinguishers and other fire appliances. The Department of Scientific and Industrial Research agreed at the same time to co-operate with the Committee in technical problems associated with the erection and equipment of the station, and under arrangements with the Fire Offices' Committee the Department, through the Building Research Station, has the use of the furnaces installed for the purpose of investigations of the fire resistance of different types of floors, walls and columns and for undertaking tests on repayment for firms where the certificate of the Department as to the grade of fire resistance of a particular form of structure is desired.

The new station at Boreham Wood, Elstree, was opened in November 1935. The furnaces for testing floors, walls and columns respectively in accordance with British Standard Definitions No. 476 are gas fired. Electrical control is provided wherever possible, the controls being grouped conveniently in a room overlooking the building which houses the furnaces. Temperatures are measured by means of thermocouples connected to recording instruments in the control room. The test load is applied to floor specimens by means of cast iron weights, but the wall and column furnaces are provided with hydraulic equipment up to 500 tons capacity, also operated from the control room. A thirty-ton electric crane operates over the whole length of the building.

A general programme of investigation on traditional or non-proprietary forms of structure which was begun

about two years ago is well advanced. Work has been done on:—

- (a) Timber floors.
- (b) Hollow clay tile floors.
- (c) Reinforced concrete slab floors.
- (d) Filler joist floors.
- (e) Rolled steel joist beams, with protection.
- (f) Reinforced concrete beams.
- (g) Brick walls (clay, sand-lime and concrete brick).
- (h) Rolled steel joist columns, with protection.
- (i) Reinforced concrete columns.

An account of this work is included in the *Report of the Building Research Board for the year 1937* (H.M. Stationery Office, 3s. 6d. net).

For the purpose of the investigation the test specimens are constructed as nearly as possible to represent the class of work that can reasonably be expected in fairly large buildings in ordinary practice. In connection with the construction of the full-size specimens many control tests are made for the purpose of recording those factors which affect, or at some later date may be found to affect, the fire resistance properties of the structure. To mention a few—the water-cement ratio is carefully recorded when casting concrete specimens; sieve analyses of all aggregates are made; the crushing strength of the concrete is determined; tests are made to determine the amount of water in the specimen at the time of the fire test.

A considerable amount of small-scale work is done to supplement the full-size tests, which are necessarily costly both in time and money. The immediate object of the general investigation now in hand is, in fact, to provide data on the fire resistance of representative types of structure. It is not practicable to carry out full-scale tests on a sufficient number of structures to cover all the minor differences in design or the multitude of different combinations of materials that can be employed.

These factors are investigated as nearly as possible by work on smaller specimens and by fundamental research into the properties of the materials themselves.

The work is still in its earlier stages. There is much that needs to be learnt concerning factors affecting the fire resistance of structures and the practical application of test data in the design of buildings. But the work that has been made possible by the publication of the British Standard Definitions and the erection and equipment of the Fire Testing Station is meeting the primary need, which is for a body of data obtained under well-defined test conditions on representative structures. With information obtained in this way further development, whether in design or in the provision of structures of improved fire resistant qualities, can proceed on a sound basis.

\* Illustrated and described in the R.I.B.A. JOURNAL of 7 December 1935, pp. 138-141.—Ed.



## VOLUME II OF THE CATALOGUE

The second volume of the R.I.B.A. Library Catalogue will be ready in a few weeks. Order forms are enclosed and intending subscribers are asked to send them in soon with the amount of money due.

The cost of the second volume will be:

A. To Members, Honorary Members and

R.I.B.A. Allied Societies, 15s. (fifteen shillings).

B. To non-Member individuals, Societies and Libraries, 30s. (thirty shillings).

Postage and packing charges for Volume II alone anywhere in Great Britain or abroad will be 2s. 6d. (two shillings and sixpence).

### THE CONTENTS AND USE OF VOLUME II

Volume II is a classified index to Volume I and is designed to be used in conjunction with Volume I.

The author and date of every book in the library is entered under its class number and the verbal description of its class. This, the main section of the index, is supplemented by an alphabetical subject index of the verbal description of classes.

Thus a reader can easily find if the library has a certain book or what books it has on a certain subject.

If he wants a book on, say, Foundations, reference to the index under "Foundations" will give him the class number under which all the books will be recorded, i.e., 69.021.15: when he turns up that number in the main part of the volume he will find all the books on the subject listed there. Preceding and following the simple "foundations" group will be all the books on related subjects, e.g., preceding foundations are books on excavation, following are books on foundations of special types of buildings, foundation calculations, piling and

so on to damp-proof courses, and then walls and walling.

Similarly in all parts of the catalogue. The reader who wants books on the English Renaissance, 72.034 (42), will find them preceded by books on the Renaissance generally, and followed by special periods of the English Renaissance with biographical books on the men of those periods and then by books on the Renaissance in other countries.

To make the catalogue as a whole as complete as possible entries have been added to Volume II of all books added since the terminating date of Volume I up to April this year.

Use of the catalogue requires no special knowledge of the classification system. The arrangement is simple and based solely on the principle of listing all subjects in their natural sequence.

There is every reason to hope that Volume II will be the most useful list of architectural books ever published. The library which it represents is wide in its scope and up-to-date in its contents. The catalogue is as generally representative of architectural literature on the technical as on the historical side. In Volume I there were about 80 inches of entries under the heading Department of Scientific and Industrial Research and 60 inches under Vitruvius! A fair enough representation of the proportion. No other published catalogue exists which covers so well the literature likely to be needed by the architectural historian or scholar, the technician or practitioner in any of the various lines and side lines of his work.

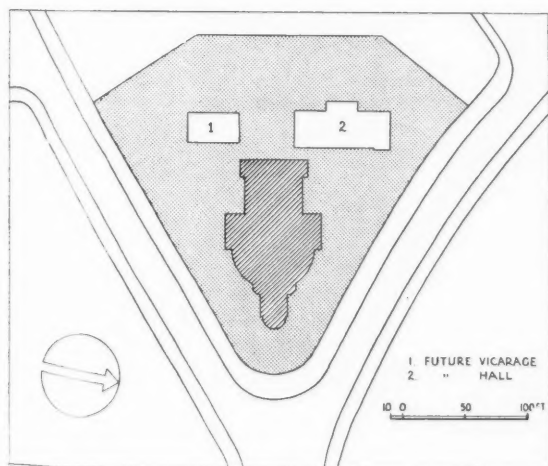
Copies of Volume I are still obtainable and for new subscribers who wish to buy both volumes now the cost of Volumes I and II together will be £1 16s. for members and £3 10s. for non-members, plus the packing and postage charges as follows: Great Britain and Ireland 3s. 6d., Australia 7s. 6d., Austria 6s., Belgium 5s. 6d., Canada 8s., Czechoslovakia 5s. 6d., Denmark 5s. 6d., Egypt 4s., Finland 6s., France 5s. 6d., Germany 5s. 6d., Greece 6s. 6d., Holland 5s. 6d., Hungary 6s. 6d., India 7s. 6d., Italy 6s., Latvia 6s., Malay 7s., New Zealand 8s. 6d., Norway 6s., Palestine 7s., Poland 6s., Portugal 6s., South Africa 10s., Sweden 6s. 6d., Switzerland 6s., Turkey 6s., U.S.S.R. 7s., U.S.A., 7s. 6d.

# BISHOP BURROUGHS MEMORIAL CHURCH OF THE EPIPHANY GIPTON, LEEDS

By N. F. CACHEMAILLE-DAY [F.]



*The east end, facing a main road, is the most important elevation. The illuminated star on the fleche marks the site of the high altar below. The walls are of an even-coloured red brickwork*



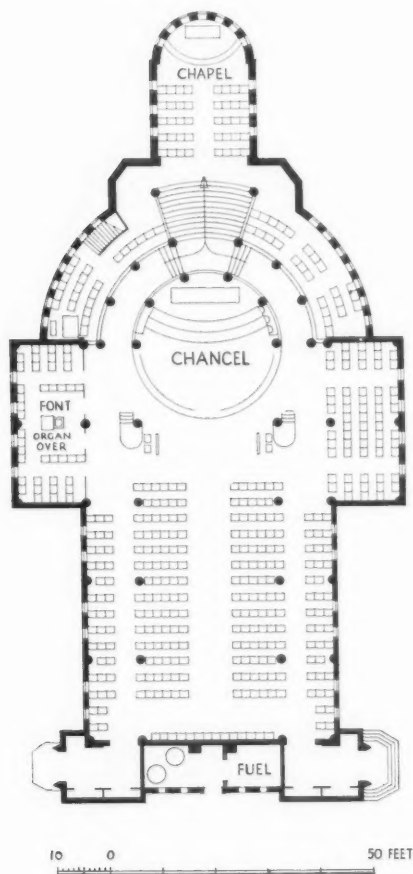
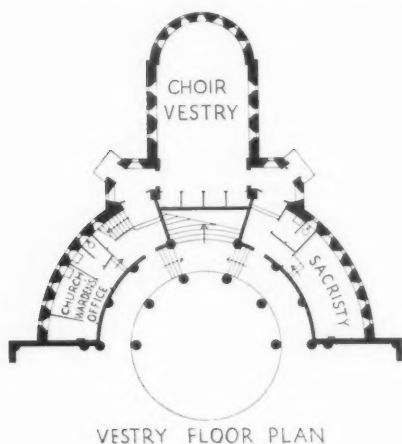
## THE PLAN

This memorial church has been built on one of the Leeds Corporation's new housing estates which was illustrated and described in the R.I.B.A. JOURNAL of 5 June 1937. It occupies a triangular site formed by the junction of two subsidiary roads with a main thoroughfare at the eastern end. The best views of the church are obtained from this end, a fact to which the architect has paid attention in his composition of masses. The church is a memorial to the late Bishop Burroughs and is dedicated to the Epiphany.

The plan, though following traditional lines, is unusual. The nave and aisles terminate in an apse with a circular chancel; beyond is the Lady Chapel, also with an apsidal end. The floor of the Lady Chapel is 8 ft. above that of the nave, and is approached by an axially-placed flight of steps behind the high altar. Also at this upper level are choir galleries placed behind a second ring of columns. The vestries are below the raised portions of the church. The interior has a fine effect of spaciousness; the open length on the main axis is 140 feet and the clear height of the nave is 42 feet, which is emphasised by the slender cylindrical columns and vertical window openings.

## THE STRUCTURE

The structure has a framework of reinforced concrete. This consists of posts, beams and columns in a rectangular grid, with infilling of solid brickwork, which is carried on ground beams. The nave walls have a beam 10 ft. above floor level passing across and incorporated



in the windows, and another at 25 ft. passing across the window heads, and a third at roof level. The columns and wall stanchions of the framework are at 15-ft. centres. The roof has a wooden framework supported on reinforced concrete main beams, and is covered with tiles. A reinforced concrete slab forms the raised floor of the Lady Chapel and galleries. The flèche is supported on the main beams by posts and inclined struts, the whole in reinforced concrete. The nave walls were framed for reasons of economy. If of solid brickwork they would have had to be 1 ft. 10½ ins. thick and provided with buttresses; the method adopted was cheaper to build. The walls of the Lady Chapel and other structures of low height are built solid. The facing bricks are an even-coloured, sand-faced medium red and the plain tile roof dark brown.

#### DECORATION AND FINISHES

The interior wall surfaces are finished with hydrated lime plaster with a natural cream colour. The concrete columns are left from the formwork and distempered. In the Lady Chapel the walls and central panel of the ceiling are painted with gold metallic paint. The floors under the seating are of beech wood blocks and in the gangways of granolithic. The chancel floor is of green and grey terrazzo. Colour is used to emphasise focal points, the light pendants are gilded wood, and the furnishings of fumed Austrian oak. The Lady Chapel windows are glazed with brightly coloured glass, designed by Mr. Christopher Webb, those in the nave being fitted with amber glass and leaded lights. The flèche marks the high altar below; the star of the cross is gilded and contains a light.

There are two main porches at the west end on each side as access is required from both roads flanking the site. The font is placed in the north transept with the organ in a gallery over. Heating is by warmed air, the apparatus being in a chamber between the porches at the west end. The cost of the building was slightly in excess of £13,000.

#### CONTRACTORS AND SUPPLIERS

*General Contractors:* Armitage & Hobson.

*Structure:* Bricks and roofing tiles, Geo. Armitage and Sons, Ltd.; reinforced concrete, the Trussed Concrete Steel Co., Ltd.; casements and leaded lights, Morris Singer Co., Ltd.; foundation stone, E. J. & A. T. Bradford; terrazzo, Art Pavements and Decorations Ltd.; wood block floors, Hollis Bros., Ltd.

*Equipment:* Heating, The Improved Pipeless Central Heating Co.; electric installation, fittings, and lightning conductors, The Alpha Manufacturing and Electrical Co.; ironmongery, Nettlefold & Son, Ltd.; public address system, R.M. Radio, Ltd.; pulpit, lectern, clergy stalls and altar rails, John Clayton & Sons; chairs, A. & F. Howland (Wycombe), Ltd.



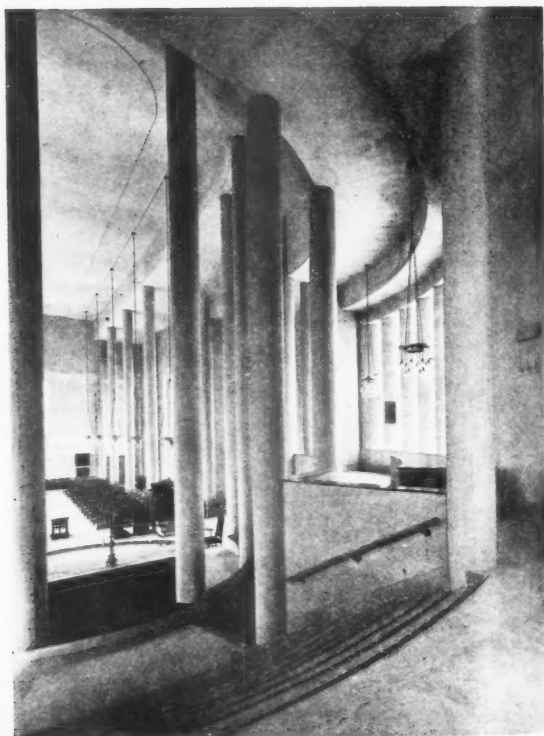
Above, left: In the Lady Chapel; the walls and central panel of the ceiling are covered with gold metallic paint. The windows are filled with bright coloured patterned glass designed by Mr. Christopher Webb. Above, right: The circular chancel is surrounded by a double ring of columns. The choir is in the gallery and the organ in a transept. Below: The exterior seen from the north east and main road



Photocent by "Architecture Illustrated"



*The nave from the west end. The structure is a reinforced concrete frame of columns, beams and stanchions infilled with 14-inch brickwork. The walls are 37 feet high and the central ceiling panel 42 feet*



*View of the nave and choir gallery from the Lady Chapel. The rich colours of the latter contrast with the plain treatment of the nave, in which the walls are natural plaster and the floors granolithic*

## Book Reviews

### THE WREN SOCIETY\*

The fifteenth Wren Society Volume in bulk is the largest and in quality one of the best there has been. The two main contents are the concluding section of the St. Paul's Cathedral building accounts and a photographic survey. The survey is the most complete of its kind yet published:—the one hundred and eighty photographs, chosen because they are of scholastic and record value rather than purely æsthetic interest (though they by no means lack æsthetic interest too), show the Cathedral from every aspect, including the air; among the first are seven more or less distant views which record poignantly the extent of the submersion of the Cathedral by its neighbour buildings. There are near views which can be compared with Malton's drawings from similar viewpoints which are to be published in the next volume: these show how greatly the Cathedral has lost in the change in scale of its immediate surroundings. Perhaps the connoisseur's chief pleasure will be in the many excellent photographs of the carved details and the interior, some of these are lent by the Royal Historical Monuments Commission and have been published before, but many are here published for the first time. This group of photographs provides the Wren student with an essential part of his evidence and the dilettanti with a complete and admirably produced visual record.

The "important" part of this volume is however the last instalment of the Cathedral accounts and an introduction by Mr. Bolton opening up this very fruitful mine. The value of the accounts as a contribution to the study of seventeenth century building method, as well as, of course, to the study of the Cathedral, cannot easily be overestimated. Mr. Bolton's thirty-six page "outline analysis" is suggestive of the wealth of information to be found here. In an earlier volume he had pointed out that the accounts serve for us in place of a specification to show not merely what things cost but of what they were made, where materials came from and all the hundred and one matters of building sequence that are so important if the work on the Cathedral and its design is to be properly understood. "How many of the thousands," Mr. Bolton asks, "who have passed through the great western doorways have realised that they are built of white marble? It is of value," he suggests, "to know that the pilasters and columns were fluted long after their erection. . ."

In this introduction the work done by the various masons, bricklayers, plumbers, glaziers, carpenters, etc., is analysed, so that it can be seen, for instance, that the value of work done by the Master Mason, Edward

Strong, was £46,466 out of a total of £185,196, that the work on the dome was done by four masons each responsible for a quarter and each quarter costing £6,250; that one carver, Edwin Arnold, born in 1612 and still working in 1696, may have been able to give Wren direct information about Jones's work; that "the said Perry (a stone merchant) was taken by a French Privateer in October 1705 and carried to Calais . . ."; that Richard Jennings, Carpenter, received £53 15s. "for his skill and extraordinary Pains, Care & Diligence in the performance of the centering of the Dome & for Modells of the same." It is interesting to see the resemblance between their and our specification jargons. ". . . For Line, Rubb, Stop, Saw, Sgre, and Lay in Plaister on Rubblework, 4,193 ft. sup. W.B. & Yellow Rants, Namur & Devonshire Marble. . ." and so on. These and a hundred and one other items of major and minor, technical and human interest fill these accounts.

In a recent review elsewhere Sir Reginald Blomfield was concerned to point out to a dilettanti author that, however much popular repute and the claims of admirers might call Vanbrugh "architect," those who knew what architecture meant knew that one could not just turn one's hand casually to architecture, to be an architect in the full meaning of the word required serious qualifications. The complexity of the detail of these St. Paul's accounts show clearly to architects and perhaps to lay-men too that building St. Paul's was no inter-prandial recreation and knowing, as we do, the constant concern in all these matters shown by Wren himself we can welcome this vast formal document as a genuine contribution to the understanding not of St. Paul's only but of its architect.

The introductory analyses include a statement of the total cost which is given as £722,779 3s. 3<sup>1</sup>/<sub>2</sub>d. An analysis reaching a rather different result was made in Vol. XIII but in view of the completion of the publication of the building account "it has seemed worth while to attempt a closer analysis." So please notice that triumphant three farthings.

There is much else in this volume to make it worth having; the frontispiece is a fine reproduction of Jan Griffier's view from Greenwich showing the half-finished Greenwich Palace and the Cathedral as yet undomed, and an introductory note states that the famous Welbeck portrait described in Vol. II and elsewhere as of Wren is unidentifiable. The volume is dedicated to the Goldsmiths Company as a thank-offering for their generosity in subsidising its publication and also in memory of Thomas Seamore and Henry Hoare, who supplied the plate for the rebuilt cathedral between 1675 and 1712.

\* *The Wren Society*, Vol. XV. 4to. 232 pp. + 104 pp. photos. Oxford University Press. 1938. Subscribers only.

## LONDON BUILDING ACTS

THE LONDON BUILDING ACTS, 1930 TO 1935.—SUPPLEMENT.  
By Bernard Dicksee, F.R.I.B.A. 8vo. viii + 192 pp.  
London: Stanford, 1938. 12s. 6d.

One of the many factors, and by no means the least, which go to render the practice of architecture more and more complicated is the ever increasing number of Acts, byelaws, regulations and codes relating to building. Not only do they increase in number and diversity, but their revision and amendment entail the repeal of prior legislation, either totally, or—what is worse—only in part. When it is remembered that the intricate patchwork thus created is wrapped up in as many separate parcels as there are documents to contain them, one can estimate in a measure the service rendered the profession by Mr. Bernard Dicksee, who, for years past, has collected and disentangled them and included them as a coherent whole between one pair of covers.

Owing to this process of addition, amendment and repeal, he has had to revise his work periodically, the last complete revision being the sixth edition containing The London Building Act, 1930. A further important development has occurred, however, with the advent of the London Building Act (Amendment) Act, 1935, and the making of the L.C.C. Building Byelaws and Timber Byelaws under that Act. To meet the occasion, Mr. Dicksee has now produced a further publication which is supplementary to his London Building Act, 1930.

Besides the London Building Act (Amendment) Act, 1935, and the byelaws made thereunder, the Supplement contains the essential Sections of other Acts passed since 1930, appertaining to building, as well as the various regulations and other documents issued during that period. The reading of the new byelaws, as reproduced in the Supplement, is facilitated by the inclusion of marginal notes (which the byelaws as originally published did not contain) as well as by the addition of a comprehensive index.

The co-ordination of the Supplement and the Dicksee's Building Act (Sixth Edition) is effected by means of a table at the beginning of the Supplement giving in numerical order

those Sections of the 1930 Act and of the byelaws contained in the sixth edition which are affected by the new byelaws together with the numbers of the new byelaws which supersede them, while an asterisk indicates those sections which, not being superseded, still remain in force.

The two volumes must therefore be read in conjunction. It would be a little time well spent if, at the outset, one ran through the London Building Act, 1930, striking out the repealed Sections of the Act (mostly in Part VI) and of the old byelaws, etc., as indicated in the table. Incidentally, the old Reinforced Concrete Regulations (mention of which is omitted from the table) should also be deleted, as indicated by the editorial footnote to Part VI of the byelaws. Having made these excisions, the contents of the two volumes together will represent practically the whole duty of man to-day with regard to building in London.

At the best, additions or alterations to building laws are troublesome and confusing, even when, as heretofore, such revisions have followed the natural process of evolution; but where, as in some of the new byelaws, the change is somewhat revolutionary, the difficulty of their assimilation is correspondingly increased. After having become by habit well versed in the constructional requirements of the old Act and the old byelaws, the prospect of the task of undertaking the comparative study of building law, past and present, even with the aid of Dicksee's Building Act and the new Supplement, might not commend itself generally.

Here, again, Mr. Dicksee has smoothed our roughened road for us by the employment of a simple device which we find in his previous works. When any part of a new byelaw differs in substance from previous legislation, the part in question is enclosed with heavy square brackets [thus], and where such difference applies to a whole byelaw, the number of that byelaw is so bracketed—wherever words are enclosed in square brackets, therefore, and whatever the meaning they contain, they also include this warning to the most cursory reader:—

["Beware! Here is something new."]

A. H. B.

## Review of Periodicals

*Attempt is made in this review to refer to the more important articles in all the journals received by the Library. None of the journals mentioned are in the Loan Library, but the Librarian will be pleased to give information about price and where each journal can be obtained. Members can have photostat copies of particular articles made at their own cost on application to the Librarian.*

## SCHOOLS

ARCHITECT AND BUILDING NEWS. 1938. 5 August.  
P. 162.

King Ethelbert Central School, Westgate-on-Sea, a non-selective mixed school for 440 pupils which includes a branch child welfare clinic. By W. R. H. Gardner [L.].

BUILDER. 1938. 12 August. P. 297.

Secondary School at Cheshunt, Herts, by A. E. Prescott.

BUILDER. 1938. 2 Sept. P. 420.

"Tendencies in School Design," a paper read before the British Association by S. E. Urwin [A.].

EDUCATION. 1938. 26 August. P. 192.

The William Ellis Secondary School, Highgate, for 480 boys, by H. P. G. Maule [F.].

EDUCATION. 1938. 26 August. P. 198.

The Winton Senior School, Eccles, for 360 boys and 360

girls, with the possibility of extension to a total of 960, by Biram and Fletcher.

BAUWELT (BERLIN). 1938. August. P. 1.  
School at Rottweil by G. Graubner and R. Kessler.

BAUKUNST (BERLIN). 1938. August. P. 265.  
Advanced technical school for aviation in Florence, by Professor Luigi Lenzi.

ARQUITECTOS (LISBON). 1938. No. 4. P. 97.  
Higher Technical Institute in Portugal, by Professor Pardo Monteiro, comprising a central pavilion accommodating lecture rooms, studios, museums and common-rooms, around which are grouped pavilions for practical work, laboratories, gymnasium and swimming bath, and the administration building.

## UNIVERSITIES

ARCHITECTS' JOURNAL. 1938. 25 August. P. 318.

ARCHITECT AND BUILDING NEWS. 1938. 26 August. P. 230.

THE BUILDER. 1938. 19 August. P. 334.

Newham College, Cambridge, by Scott, Shepherd and Breakwell [I.F.A.].

ARCHITECTS' JOURNAL. 1938. 1 September. P. 357.

First section of the new building for the Society of Oxford Home Students, by Sir Giles Gilbert Scott [F.].

## MUSEUMS AND EXHIBITIONS

ARCHITECTURAL REVIEW. 1938. September. P. 120.  
Section on exhibition stands.

L'ARCHITECTURE D'AUJOURD'HUI (PARIS). 1938. June.  
Good museum number, with special articles on museum requirements, the display of works of art, and lighting and ventilation. Well illustrated section on recent museums. A copy has been added to the R.I.B.A. Loan Library.

FORUM (NEW YORK). 1938. August. P. 143.

Results of the competition for an Art Centre for Wheaton College. First premium: Bennett and Hornbostel; second premium: Gropius and Breuer.

CASABELLA (MILAN). 1938. No. 127. P. 14.

The nineteenth Milan exhibition; very well illustrated.

BYGGE KUNST (OSLO). 1938. July. P. 89.

Designs for the Norwegian pavilion at the New York World Fair, 1939.

DOM-OSIEDLE-MIESKANIE (WARSAW). 1938. No. 6-7. P. 49.

Photographs of Le Corbusier's "Temps Nouveau" Pavilion at the 1937 Paris Exhibition.

## LIBRARIES

LIBRARY ASSOCIATION RECORD. 1938. August. PP. 413, 422.

Libraries at Leeds and Gillingham, by F. L. Charlton [F.] and J. L. Redfern [F.] respectively, described by the librarians.

ARKKITEHTI (HELSINGFORS). 1938. No. 6. P. 86.

Projects for extensions to the University Library at Helsingfors, by Aarne Ervi, Alvar Aalto, Erik Lindroos, Aulis Blomstedt, and Prof. J. S. Sirén.

## AIRPORTS

ARCHITECTURAL REVIEW. 1938. September. P. 95.

Exeter Municipal Airport, by Robert Hening and Anthony Chitty [A.].

ARCHITECT AND BUILDING NEWS. 1938. 19 August. P. 204.

DESIGN AND CONSTRUCTION. 1938. August. P. 293.

THE BUILDER. 1938. 26 August. P. 381.

New terminal buildings for Ipswich Municipal Airport, by Robert Hening and Anthony Chitty [A.], comprising hangars, public rooms, and club rooms with squash courts.

ARKKITEHTI (HELSINGFORS). 1938. No. 7. P. 97.

Airport at Helsingfors, by the State Building Department.

BYGMESTEREN (COPENHAGEN). 1938. 27 August. P. 207.

Airport at Aalborg, by Carlo Odgaard.

A MAGYAR MÉRNÖK (BUDAPEST). 1938. August. P. 277.

Article on Civil Airports, by Dr. Ing. Bierbauer Virgil.

## HOTELS

THE ARCHITECT AND BUILDING NEWS. 1938. 12 August. P. 175.

"The Ocean Hotel," Saltdean, Brighton, by R. W. H. Jones [L.].

CASABELLA (MILAN). 1938. No. 127. P. 4.

Projects for holiday hostels.

TÉR ÉS FORMA (BUDAPEST). 1938. No. 7. P. 209.

A holiday hotel with 150 beds for the National Assurance Institute of Private Hungarian Employees, by Louis Hidasi.

## SHOPS

CASABELLA (MILAN). 1938. No. 128. PP. 18, 26.

Two shops with excellent display arrangements, one at Milan by Palanti, and one at Naples by Bottoni.

## INDUSTRIAL

ARCHITECT AND BUILDING NEWS. 1938. 2 September. P. 264.

Factory at Remscheid, Germany, by Dr. Ludwig Lemmer.

FORUM (NEW YORK). 1938. August. P. 87.

Very well illustrated section on the industrial architecture of Albert Kahn, Inc., with interesting notes on the organisation of the firm.

BAUWELT (BERLIN). 1938. 25 August. P. 1.

New German industrial buildings.

## TRANSPORT AND BRIDGES

CIVIL ENGINEERING. 1938. August. P. 283.

An article with diagrams on the Chientang Bridge, Hangchow, by A. O. Whitehouse.

JOURNAL OF THE INSTITUTION OF MUNICIPAL AND COUNTY ENGINEERS. 1938. August. P. 301.

Technical article on the design of Highway Transition Curves, by H. A. Warren.

APXNTEKTYPA (MOSCOW). 1938. No. 6. P. 30.

Projects for Moscow Metro stations.

DIE 8 EN OPBOUW (AMSTERDAM). 1938. No. 17. P. 159.

Illustrated article on the use of trees in the Amsterdam streets, with diagrams of various combinations of carriage way, service road, pavement, planting, etc.

## WELFARE AND COMMUNITY BUILDINGS

ARCHITECTURAL REVIEW. 1938. September. P. 117.

ARCHITECT AND BUILDING NEWS. 1938. 2 September. P. 256.

The Portman Day Nursery, Marylebone, by Stanley Hall and Easton & Robertson [FF.]. A building comprising a day nursery, a small clinic, and a large lecture hall used in connection with the welfare work in the locality.

DESIGN AND CONSTRUCTION. 1938. August. P. 297.

Southall Community Centre, by J. B. Thomson. A group of buildings comprising a lodge, a branch library, and a branch health centre for maternity and child welfare.

## HOSPITALS

ARCHITECTURAL REVIEW. 1938. September. P. 99.

Extension to the National Hospital to accommodate new surgical and research departments, by Slater, Moberly and Uren [FF.].

ARCHITECT AND BUILDING NEWS. 1938. 5 August. P. 150.  
Callis Court Convalescent Home, Broadstairs, for male working-class patients, by G. Grey Wornum [F.].

THE BUILDER. 1938. 2 September. P. 431.

Cuddington Isolation Hospital, Banstead, Surrey, by Williams, Pettett and Gardner [L/F.].

HOSPITAL AND NURSING HOME MANAGEMENT. 1938. August. P. 198.

Birmingham Hospitals Centre, by Lanchester and Lodge [FF.].

ARCHITECTURAL RECORD (NEW YORK). 1938. August. P. 86.

Section dealing especially with chronic, tuberculosis and psychiatric hospitals. Useful notes and diagrams on wards, utility rooms, operating units and kitchens.

**LA CONSTRUCTION MODERNE (PARIS).** 1938. 7 August. P. 520.

The Raymond Poincaré hospital at Garches, by M. H. Prudhomme, for chronically ill Parisians of both sexes.

**CASABELLA (MILAN).** 1938. No. 128. P. 4.

Anti-tuberculosis clinic at Alexandria, by Gardella e Martini; a reinforced concrete frame building with interesting panel walls of glass bricks, hoppers, and honeycomb brickwork.

### SPORTS BUILDINGS

**THE ARCHITECT AND BUILDING NEWS.** 1938. 12 August. P. 183.

Timber gymnasium at Nonington College, Kent, by Joycelyn F. Adburgham [L.].

**ARCHITECT AND BUILDING NEWS.** 1938. 19 August. P. 217.

The Saltdean Lido, comprising swimming pool, sun bathing area, café and tea terrace, by R. W. H. Jones [L.].

**BUILDER.** 1938. 26 August. P. 377.

New Lido at Parliament Hill Fields, for the L.C.C., by H. A. Rowbotham and T. L. Smithson [A./L.].

**MODERNE BAUFORMEN (STUTTGART).** 1938. August. P. 409.

Bathing place, restaurant, and open-air bath at Ouchy, on the Lake of Geneva, by Marc Piccard, with good detail drawings. Bathing place and restaurant on Oslofjord by Eyvind Moestue and O. E. Schistad. Large open-air thermal bath in Poland by R. Gutt and A. Szniolis. Bathing establishment near Madrid, by Gutiérrez Soto, comprising one covered and two open-air baths. The changing rooms in the Swimming Stadium at Cologne, by B. O. Bongartz; and a German scheme for a covered bath with a sliding glass roof. A copy has been added to the R.I.B.A. Loan Library.

**ARCHITEKT S.I.A. (PRAGUE).** 1938. No. 7. P. 109.

The Masaryk Stadium, by F. Balcárek and K. Kopp.

### THEATRES—CINEMAS

**ARCHITECTS' JOURNAL.** 1938. 1 September. P. 370.

New State Theatre in the rebuilt Trocadéro, Paris, by Carlu, Boileau and Azema.

**ARCHITECT AND BUILDING NEWS.** 1938. 26 August. P. 237.

Blackpool South Pier Entrance and Pavilion, by R. W. Hurst and D. R. Humphrys.

**PENCIL POINTS (NEW YORK).** 1938. August. P. 524.

Data Sheets by Don Graf on cinema plan shape, floor slope and stage height.

**BAUGILDE (BERLIN).** 1938. August. P. 765.

Festival Theatre at Bayreuth, by Hans C. Reissinger.

### RELIGIOUS

**L'ARCHITECTURE D'AUJOURD'HUI (PARIS).** 1938. July.

Number devoted to Religious Architecture; dealing with monastic buildings, chapels, churches, synagogues, crematoria, and military cemeteries. Excellently illustrated.

A copy is being added to the R.I.B.A. Loan Library.

### DOMESTIC

**R.I.B.A. JOURNAL.** 1938. 15 August. P. 923.

House at Burn Bridge, Harrogate, by John C. Procter [F.].

**ARCHITECT AND BUILDING NEWS.** 1938. 5 August. P. 156.

A block of flats between party walls in the Rue Vion Whitcomb, Paris, by Jean Ginsberg and François Heep.

**ARCHITECTS' JOURNAL.** 1938. 1 September. P. 373.

A group of houses in Froggnal, Hampstead, by Ernst L. Freud.

**DESIGN AND CONSTRUCTION.** 1938. August. P. 304.

Reference section on houses, illustrating some 17 houses with concise notes on planning and construction.

**PENCIL POINTS (NEW YORK).** 1938. August. P. 472.

The domestic work of William Wilson Wurster.

**ARKKITEHTI (HELSINGFORS).** 1938. No. 7. P. 109.

Interesting house by Dag and Kaj Englund, for their own occupation.

**CASABELLA (MILAN).** 1938. No. 128. P. 10.

Two private houses at Gellert-Berg and Budapest, by Ludwig Kozma.

**ARCHITETTURA (ROME).** 1938. July. P. 41.

An interesting eleven storey block of flats at Genoa, by L. G. Daneri.

### MATERIALS

**ARCHITECT AND BUILDING NEWS.** 1938. 2 September. P. 272.

Article on pavings, by Edwin Gunn [A.], dealing with concrete, brick, slate and stone.

**NATIONAL BUILDER.** 1938. August. P. 12.

Article on enamelled metal sheets for facing work, by C. C. Handisyde [A.].

### CONSTRUCTION

**OFFICIAL ARCHITECT.** 1938. August. P. 346.

Articles on various types of floor construction, with particular reference to floors in schools, industrial floors, and sub-floor heating.

**NATIONAL BUILDER.** 1938. August. P. 19.

Useful construction details of internal and external doors.

### EQUIPMENT—HEATING—VENTILATION

**ARCHITECTURAL REVIEW.** 1938. September. P. 131.

Well illustrated section of the lighting of the interior.

**HEATING AND VENTILATING ENGINEER.** 1938. August. P. 52.

"Designed air diffusion," by J. K. H. Pryke; an examination of the behaviour of air after it leaves the ductwork via the supply grilles.

**HEATING AND VENTILATING ENGINEER.** 1938. August. P. 66.

Central heating calculations, by Sidney F. Greenland.

**HEATING AND VENTILATING ENGINEER.** 1938. August. P. 61.

Article on the method of dealing with extensions and re-modelling of domestic central heating systems, by L. J. Overton.

### HISTORICAL

**R.I.B.A. JOURNAL.** 1938. 15 August. P. 909.

"The Architectural Interest of the English Meeting House," by Andrew L. Drummond, Ph. D.

**DOM-OSIEDLE-MIESKANIE (WARSAW).** 1938. No. 6-7. P. 2.

Ten Years Work of the C.I.A.M., 1928-1938, by H. and S. Syrkus.

### BIOGRAPHICAL

**R.I.B.A. JOURNAL.** 1938. 12 September. P. 957.

"Robert Maillart—The Architecture of a great Swiss Engineer." An article by P. Morton Shand. Well illustrated.

**SHELTER (DETROIT).** 1938. April. P. 26.

"Walter Gropius," an article by G. Holmes Perkins, with an introduction by Henry-Russell Hitchcock, Jr. A complete list of Gropius' works to date is included.

**FORUM (BRATISLAVA).** 1938. No. 7. P. 125.

Richard Neutra's domestic work in America; a well-illustrated article.

## Correspondence

### THE ADAM BROTHERS AND THEIR PLASTER

"Fiveways,"

Upper Deal

To the Editor, JOURNAL R.I.B.A.

SIR,—Through the kindness of Mr. J. H. Mowll of Dover I have come into the possession of a letter, dated 8 March 1783, from the Rev. Samuel Denne, Vicar of Wilmington, to a Mr. Hawkins, Attorney at Law, at New Palace Yard, Westminster. The letter came from the collections of the late Charles Roach Smith, the antiquary, and was bought with other material after his death by the late Mr. Martyn Mowll. The interest of the letter to architects is in a piece of gossip relating to, we are sorry to say, some careless work on the part of the Adams and their contractors. Was not speculative building, and therefore presumably hurried, one of the enterprises of the famous brothers? Here is the passage.

"A Special Jury is, I am told panelled to try, at the Assizes at Maidstone, an action brought by Lord Mahon against the Adams, who had been employed to cover a house with their Patent Plaster that was to last for ever, but which dropt off in a very short time. Whether the cause will be heard before Justices Gould or Ashurst is not known, but if the former, his charge to the Jury is not likely to set the matter in dispute in the clearest light. Where the Defendants to chuse who should preside, it is not improbable that they might fix upon a countryman of theirs through whose interest they obtained that worst of all lotteries, the Adelphi bubble. And all the world will allow that the noble law Lord alluded to Surpasses in *late plastering* every one of your free Mason fraternity."

(Signed) S. DENNE

I am, Sir, Very faithfully yours,

W. P. D. STEBBING

### REPORT ON THE POSSIBILITIES OF SECURING STANDARDS OF ADEQUACY IN THE NATURAL LIGHTING OF DWELLINGS BY REGULATIONS UNDER THE TOWN PLANNING ACT

9 Gray's Inn Square,

London, W.C.1

24.8.38

To the Editor, JOURNAL R.I.B.A.

DEAR SIR,—With reference to your review of the above report, now published by Messrs. P. S. King, in the August issue of the JOURNAL (p. 930) may I suggest that any credit which may attach to it should be accorded to the hard working Joint Committee which initiated, revised, and issued it; rather than to

Yours faithfully,

PERCY J. WALDRAM

### ENGLISH MEETING HOUSES

East Meon,

Hants

16.8.38

To the Editor, JOURNAL R.I.B.A.

DEAR SIR,—Dr. Drummond has by no means exhausted the examples of eighteenth-century chapels which strike one with their seemly unpretentiousness. No doubt he will go on collecting these for a recording volume before their aptness for residential purposes is fully realised. He will not forget I hope to give examples of the chapels erected under more aristocratic influence and finish with a few examples of modernism in another connection. This reminds me that no mention has been made of Sir John Burnet's work at the Weigh House, whose late pastor was so great an authority on the subject. Sir John Burnet anglicised the chancel of Waterhouse's chapel with great skill and distinction and this surely is a very memorable piece of work, or at all events in the estimation of "nice quiet people" (to whom Mr. Frazer Tomlins refers in his excellent letter).

Yours faithfully,

P. MORLEY HORDER

### MODERN SCULPTURE

77 Victoria Street,

Grimsby

24.8.38

To the Editor, JOURNAL R.I.B.A.

SIR,—I am, perhaps, a bit squeamish and old-fashioned, but I, and perhaps a few other old-timers, do not much enjoy the "Sculpture by Henry Moore," p. 855 of the JOURNAL.

It is not for such as can contemplate with equanimity the garrotted criminal of Goya and the ghastly martyrdoms beloved by sixteenth-century Flemish artists to quarrel with this representation of a wretched victim broken, or half broken, on the wheel. But if they like this sort of thing, then they must be even more old-fashioned than I.

The executioner whose work is here represented was evidently a bungler. The left thigh and the right upper arm are well and truly fractured, but forgetting the proper procedure and the manifest neglect of the remaining members, he prematurely delivers or attempts to deliver the coup-de-grace, both blows missing the proper point, the breast bone. However, the mingled look on the victim's face of pain at the procedure and contempt for his badly trained tormenter is very well rendered.

Let Mr. Moore try again, and give us the patient properly smashed up. For those who like that sort of thing, this ought to be just what they would like.

Faithfully yours,

JOHN J. CRESSWELL [F.]

## Obituary

### FRANCIS CHARLES BAYLISS [F.]

We regret to record the death of Mr. F. C. Bayliss, architect to Messrs. W. H. Smith & Son. He was born on 5 July 1876, and was educated at King Edward's Grammar School, Birmingham, and received his training at the School of Art there.

In 1904, whilst working in his father's firm in Birmingham, he was approached by W. H. Smith & Son with a view to taking up a position with them. At this time W. H. Smith & Son had lost the contract for bookstalls on the Great Western Railway and decided to open shops in their place. Mr. Bayliss' first duties consisted of the opening of 150 shops in the space of 10 weeks, and from that time was in charge of the Estate Department of W. H. Smith & Son until the date of his death.

With great foresight he realised that there were immense possibilities of development in the wholesale as well as the retail portion of the firm's activities. As part of his duties he negotiated for and purchased sites, designing and supervising the erection of the firm's many buildings throughout the country. Examples of his work can be seen not only in London but in Newcastle, Sheffield, Hull, Liverpool, Bristol and Birmingham. His last work is the wholesale house at Bristol, just completed, and the Birmingham wholesale house now under construction.

On 4 March 1925 he was elected a Fellow of the R.I.B.A., and in 1926 the architects associated with the firm gave a dinner to the partners, of which he was the guest of honour and received a silver presentation from his fellow architects.

In 1929, on the death of the late Viscount Hambleden, Hambleden Estates, Ltd., came into being, and in addition to being estate manager for W. H. Smith & Son, Ltd., he was appointed surveyor to Hambleden Estates, Ltd.

In addition to his activities on behalf of the firm he was keenly interested in the work of the Y.W.C.A., for whom he designed and supervised the construction of their Chapel in Great Russell Street, and at the time of his death was working on a scheme for a swimming bath for them. He was also a staunch supporter of the Conservative Association, being Chairman of the East Preston Conservative Association, whose headquarters he also designed. He leaves a widow and two sons.

### FRANCIS GEORGE FIELDER HOOPER [Ret. F.]

We regret to record the death on 11 June of Mr. F. G. F. Hooper at the age of 78. He was articled to Mr. Arthur Cates, Crown Surveyor, in London, and studied at the Royal Academy School of Architecture. In 1882 he was successful in winning the Pugin Travelling Studentship, and six years later followed up this success by winning the Godwin Bursary, and studied in Paris.

After serving for a time with Messrs. Saxon Snell, he began practice on his own account in Victoria Street, and later at Craig's Court, before joining in partnership with Thomas Archer, during which time the firm was associated with Whitehall Court, Victoria Embankment, and the Hyde Park Hotel. He later practised in Norfolk Street. His own work

was principally domestic, several examples being in the Wickham Road, Beckenham, on the Kelsey Park Estate, where he built a house for himself.

Mr. Hooper was a member of the Beckenham Urban District Council from April 1913 until his resignation in October 1919. His interests were many and varied. He was honorary secretary of the Architectural Association, afterwards vice-president, and served for many years on the Science Standing Committee of the R.I.B.A., being for a time joint honorary secretary. For forty years he was on the Council of the Victoria Dwellings' Association, one of the first artisan dwelling companies.

His son, Mr. Arnold F. Hooper [F.] took over the practice some years ago.

### GRAHAME COTMAN [F.]

Mr. Grahame Cotman, whose death on 6 July, at the age of 60, we regret to record, was a well-known Norwich architect.

He received his training at the Polytechnic, Regent Street, and for some years worked in the office of Sir Ernest George. At the age of 20 he came to Norwich, and during his forty years there Mr. Cotman was connected with the firm of Edward Boardman & Son, of which he was a partner.

In conjunction with his firm he was responsible for the design of many well-known buildings in Norwich. These include the Jenny Lind Hospital, the Queen Alexandra Nurses' Home, the ear, nose and throat, and the children's blocks at the Norfolk and Norwich Hospital, the Norfolk News Company's offices in London Street, Standley's, Orford Place, the Co-operative bakery in Queen's Road, Messrs. Sexton, Sons & Everard's factory and Cromer Hospital. He also did a great deal of work for the Kilverstone Estate near Thetford and Crown Point, Norwich, and was concerned in the renovation of Carrow Abbey, Suckling House and Stuart Hall.

He was elected president of the Norfolk and Norwich Association of Architects a few days before his death. One of his great interests in Norwich was the welfare of the Norwich Society.

### HAROLD OSWALD [F.]

We regret to record the death on 28 April of Mr. Harold Oswald. He was born in 1873 and received his training first in the firm of S. Oswald and Son and later J. Oswald & Son. He went into partnership in 1899 with his father, Mr. Joseph Oswald, and practised all his life in Newcastle-upon-Tyne.

Mr. Oswald was responsible for buildings at racecourses at Pontefract, Hamilton Park, Hugh Gosforth Park, Lanark, Musselburgh, Carlisle, etc. He also built numerous licensed houses in the north and business premises in and about Newcastle. He had an extensive practice in connection with damages to buildings caused by mining operations.

Mr. Oswald was President of the Northern Architectural Association for the sessions 1935-36 and 1936-37. He was a Justice of the Peace of Newcastle from 1930 and a Commissioner for Income Tax from 1932 until his death. He was also the author of *The Theatres Royal in Newcastle-upon-Tyne*, published in 1936.

The practice is being carried on by Mr. Gilbert Oswald at 68 Northumberland Street, Newcastle-upon-Tyne.

## ARTHUR FORMAN BALFOUR PAUL, M.C. [F.]

We regret to announce the death of Mr. A. F. B. Paul on 3 June 1938. Mr. Paul, who was born in 1875, received his training in the office of Sir R. Rowand Anderson, LL.D., A.R.S.A.

In 1900 he began to practise on his own account, then from 1903-1919 in partnership with Sir R. Rowand Anderson. For the next fourteen years he was sole partner, in 1933 the firm became Rowand Anderson and Paul and Partners.

His principal architectural works include the Deaconess Hospital; alterations to Edinburgh Royal Infirmary; Edinburgh University New Chemistry Block; St. George's School, Cowan House, George Square; Kimmerghame House, Fettes (for Girls). He also designed two ship interiors, S.S. *Ausania* and S.S. *Ascanica*, and was responsible for the Scottish Rugby Union War Memorial and others. Mr. Paul was estate architect for the Fettes Trust and Braid Estate.

From 1934-36 he was President of the Edinburgh Architectural Association, and was President-Elect of the Royal Incorporation of Architects in Scotland.

The practice is being continued by Mr. W. Hardie Kininmonth [A.] and Mr. Basil Spence [A.] at 16 Rutland Square, Edinburgh.

## R. J. W. NEWMAN [F.]

Mr. Reginald Newman, who died on 16 April, was born in 1875 and received his training in the office of his father, Mr. James Newman, at Sandown, Isle of Wight.

When he was twenty-five he began to practise in London and at one time was in partnership with Mr. Frank Makintosh. Mr. Newman was responsible, with Mr. J. H. Crosby, for a town planning scheme for Beaconsfield and was architect of the Reigate and Redhill Municipal Offices and a number of domestic and ecclesiastical buildings.

The practice is being continued by Mr. R. S. Balgarnie Wyld [A.] at 31 Bedford Row, W.C.1.

## SYDNEY TUGWELL [F.]

We regret to record the death on 23 July of Mr. Sydney Tugwell. He was born in 1869 and received his training in the office of Mr. E. J. May, Hart Street, London.

In 1898 he began to practise on his own account. His work was chiefly domestic in character, near Bournemouth, and included work at the Cornelia and East Dorset Hospital, Poole, St. Osmunds Church, Parkstone, and the reconstruction of Norman Court, Salisbury. He also carried out considerable renovations to a German château in Hanover.

## FREDERICK SALE [A.]

We regret to record the death in July 1937 of Mr. Frederick Sale, of Melbourne.

The secretary of the Royal Victorian Institute of Architects writes as follows:—

"Frederick Sale was a member of the R.V.I.A. and of the R.I.B.A. for many years, during which time he served on the Victorian Institute Council. His association with the profession as a practitioner, his uplifting personality and the valuable work which he performed on behalf of the profession

endeared him to the hearts of all with whom he came into contact. Our late friend served with the Australian forces during the Great War, his bravery earning for him promotion to a captaincy and the award of the Military Cross."

## JAMES LINDSEY GRANT [A.]

Mr. James Lindsey Grant, whose death on 29 March at the age of 71 we regret to record, was well known to many people for his work in connection with Manchester University.

Mr. Grant received his training in the office of Mr. R. Anderson of Edinburgh, and attended part-time lectures at the Architectural Department of the Edinburgh School of Art.

He started to practise on his own account about 1905, and won various competitions, including the Oldham Baths, Chadderton Carnegie Library, Montrose Library, Poulton Church renewal and added Church Room, Church Room at Northenden, extension to North Manchester Grammar School. In addition, he designed many houses and business premises, and shared in some town planning schemes, giving valuable suggestions for open-air schools.

For many years he was lecturer in architecture at Manchester University. After the war he became head of the Municipal School of Art, and under his direction the school developed into a flourishing full-time school with a five-year course. Mr. Grant was noted for his fine draughtsmanship and for his scholarly work on the history of architecture. He had a detailed knowledge, in particular, of Etruscan decoration, and his reconstructive drawings of Etruscan architecture are prized by students of architectural history. He specialized in a classical Tuscan temple. Drawings of this temple were presented to the R.I.B.A. in 1937.

Mr. Grant was an active member of the Manchester Society of Architects and took part in the educational schemes. He had been in retirement for some years before his death.

## Note

## "SIR JOHN BURNET"

Mr. Fyfe wishes us to call attention to an error in the first line of his memoirs published in the JOURNAL of 15 August. The date 1899 should be 1889. Mr. Fyfe also wishes to add the following footnote to the end of paragraph 4, after "Glasgow Western Infirmary":—"Apart from the buildings already mentioned, the following list will supplement them to some extent, for the period 1879 to 1904: The Drumsheugh Baths, Edinburgh (in a Moorish style—about 1889); house at Auchterarder for Mr. James Reid (with a large stone *porte cochère* full of French feeling—about 1889); Baronald House, Lanarkshire (1890); 'Garmoye,' Dumbarton, for Mr. J. M. Denny (about 1890); Finlaystone House, Langbank, for Mr. Kidston (about 1893); University Gardens, Glasgow—a terrace (particularly No. 4, where there was beautiful interior work done for Mr. James Mann—about 1894); 'Fairmielea,' Selkirk, for Mr. A. F. Roberts (about 1904); Botanical Building at Glasgow University (jointly with Mr. J. Oldrid Scott—1900). For these particulars and for many of the others I have been greatly indebted to Mr. George Galloway, who was chief clerk for the firm in the Glasgow office from 1882 till 1907, or thereabouts."

## School of Planning and Research for National Development

Following on the recent announcement of the Council of the Architectural Association, that they were no longer able to carry on the above school, the Advisory Board have made the necessary arrangements to continue it under their direction, at its present address, No. 7 Bedford Square, London, W.C.1. The policy of the school will aim at giving a thorough and wide post-graduate education in planning, both local, regional and national, following upon the lines pursued in the previous year. Research work will form an important part of this training. Mr. E. A. A. Rowse, A.R.I.B.A., A.M.T.P.I., A.M.I.Struct.E., has agreed to remain as Principal.

The membership of the Board is now as follows :—

<i>Chairman :</i>	
Sir Raymond Unwin, P.P.R.I.B.A., P.P.T.P.I.	General Planning.
<i>Vice-Chairman :</i>	
The Right Honourable the Lord Horder, G.C.V.O., M.D., B.Sc., F.R.C.P., D.C.L.	Health.
Dr. Thomas Adams, D.Eng., F.R.I.B.A., F.S.I., P.I.L.A., P.P.T.P.I.	Planning.
Major H. E. Aldington, A.M.I.C.E. (Divisional Road Engineer (London Division), Ministry of Transport).	Transport.
*Dr. David Anderson, LL.D., B.Sc., M.Inst.C.E. (representing The Institution of Civil Engineers).	
The Right Honourable Lord Balfour of Burleigh, K.C., LL.D.	Housing.
Professor Ernest Barker, M.A., Litt.D.	Sociology.
Mr. H. Berry, A.M.I.Mech.E., J.P. (Chairman, The Town Planning and Building Regulations Committee, L.C.C.).	
Sir Leonard Browett, C.B., C.B.E. (representing The Institute of Transport).	Transport.
Mr. L. H. Bucknell, F.R.I.B.A. (representing The Architectural Association).	
Sir Henry Bunbury, K.C.B. (Vice-President, The National Institute of Industrial Administration).	Communications.
Mr. R. Coppock (General Secretary, The National Federation of Building Trades Operatives).	
*Dr. A. P. M. Fleming, C.B.E., D.Eng. (Director, Metropolitan-Vickers Electrical Co., Ltd.).	Electrical Industry.
Sir Gwilym Gibbon, C.B., C.B.E.	Public Administration.
Mr. H. S. Goodhart-Rendel, P.R.I.B.A. (representing The Royal Institute of British Architects).	

*Sir Alfred Hurst, K.B.E., C.B. (Chairman, The London Builders' Conference).	
*Mr. J. E. James.	Industry.
Dr. G. W. C. Kaye, O.B.E., M.A., D.Sc. (Superintendent, Physics Department, National Physical Laboratory).	Scientific Research.
Mr. Percy W. Lovell, F.S.A. (Secretary, The London Society).	
The Right Honourable Lord McGowan, K.B.E., LL.D., D.C.L. (Chairman, Imperial Chemical Industries, Ltd.).	Industry.
*Mr. G. L. Pepler, P.P.T.P.I., F.S.I. (Ministry of Health, Town and Country Planning Division).	Town Planning Administration.
*Mr. Frank Pick (Vice-Chairman, London Passenger Transport Board).	Urban Transport.
Mr. Howard Robertson, M.C., F.R.I.B.A., S.A.D.G.	
Major Leslie Roseveare, O.B.E., P.P.T.P.I., M.Inst.C.E. (representing The Town Planning Institute).	
Air Marshal Sir John Maitland Salmond, G.C.B., C.M.G., C.V.O., D.S.O., D.C.L., LL.D.	Airways.
Sir Arthur Salter, K.C.B., M.A., D.C.L., LL.D.	Economics.
Sir Giles Gilbert Scott, R.A., P.P.R.I.B.A., D.C.L., LL.D.	
The Right Honourable The Lord Justice Scott, K.C.	Law.
Sir Jonah Walker Smith, M.P., M.Inst.C.E.	Employers and Building Industry.
Mr. Louis de Soissons, O.B.E., F.R.I.B.A., S.A.D.G. (Architect of Welwyn Garden City).	Town Planning.
The Right Honourable Lord Stamp, G.C.B., G.B.E., LL.D., Sc.D., D.Sc., F.B.A.	Railways.
Mr. Percy Thomas, O.B.E., P.P.R.I.B.A.	
Mr. Christopher Turnor.	Agriculture.
*Mr. V. Watlington, M.I.E.E. (Director, The British Electrical and Allied Manufacturers' Association, Ltd.).	
*Honorary Secretary and Treasurer : Mr. F. R. Yerbury, Hon. A.R.I.B.A.	

At a meeting of the Board, held on Thursday, 11 August, a resolution was passed appointing an Executive Committee to control the school. The names of the members are marked with an asterisk. The school will commence its academic year on Tuesday, 4 October 1938. Applications for entry to the school to be sent to the School Secretary, at No. 7 Bedford Square, London, W.C.1, with whom arrangements for interviews with the Principal can also be made.

## Notes

### R.I.B.A. EXAMINATIONS

#### MAY AND JULY 1938

The questions set at the Intermediate, Final and Special Final Examinations held in May and July 1938 have been published, and are on sale at the Royal Institute, price 1s. (exclusive of postage).

### HOLIDAYS IN FRANCE

We have been asked to draw attention to the Foyer de l'Abbaye de Royaumont, Asnières-sur-Oise, France, a beautiful Cistercian monastery, now organised as a centre for writers and painters of all nationalities. It is 35 km. from Paris; the old cells have been converted into comfortable rooms and full board is 50 fr. a day. Particulars can be had from M. Bernard Champigneulle, the director, at 28 Quai d'Orléans, Paris IV<sup>e</sup>.

## LECTURES ON ARCHITECTURE

Mr. Daniel Roth [A.] is giving a course of 36 weekly lectures at Holloway Literary Institute (L.C.C.), Hildrop Road, N.7, commencing on Wednesday, 28 September. The fee for the course is 7s. 6d. He is also giving a course of 25 weekly lectures at Hampstead Garden Suburb Institute commencing on Thursday, 6 October. The fee for the course is 12s. 6d.

Both courses will be similar and will consist roughly of three parts.

1. Architecture in relation to building methods.
2. Domestic architecture.
3. An analysis of architectural design.

## THE BUILDING EXHIBITION

By the courtesy of Mr. H. Greville Montgomery a R.I.B.A. Room is being provided at the Building Exhibition for the use of Members of the R.I.B.A. As in previous years, the R.I.B.A. Public Relations Committee, who are responsible for the organisation of the Room, are extending an invitation to make use of it to members of Allied and Associated Societies, the Architecture Club and the Building Industries National Council. The Room is situated over the Addison Road entrance and can be approached either from the

entrance hall or the gallery. Visitors may obtain light refreshments, use the telephone, and messages may be left there for them. The Exhibition opens on 16 September and closes on 1 October.

## THE COUNCIL FOR THE PRESERVATION OF RURAL ENGLAND

The eleventh national conference for the preservation of the countryside is to be held at Chester from 13-16 October under the presidency of the Earl of Crawford and Balcarres, K.T. Three papers are to be read, by Professor R. G. Stapledon on *Agriculture and the Countryside*, by Mr. H. G. Strauss, M.P., on *The Approach to the Town (Unsettled Development, Advertisements, etc.)*, and by the Rt. Hon. Lord Justice Scott on *National Planning*. Several attractive tours to places of interest in the neighbourhood have also been arranged, including an all-day tour of Cheshire on Sunday, 16 October, and a tour of Snowdonia. The conference is not confined to members of the C.P.R.E., all societies, organisations and local authorities wishing to send delegates, and all individuals who are anxious to attend, should write for full particulars and forms to the Secretary of the C.P.R.E., H. G. Griffin, Esq., C.B.E., 4 Hobart Place, London, S.W.1. The conference fee is 5s.

## EXAMINATION RESULTS

*The Final Examination*

The R.I.B.A. Final Examination was held in London and Edinburgh from 13 to 21 July 1938.

Of the 244 candidates examined, 139 passed (53 of whom sat for and passed in Part 1 only, and 1 of whom sat for and passed in Part 2 only) and 105 were relegated.

The successful candidates are as follows:—

APPLEGARTH, Arnold; BAILEY, Hector Oswald; BAKER, Leslie Wiford; BALL, William Kenneth (*Part 1 only*); BARBER, Anthony Gerald; BARNES, William Edwin; BATEMAN, Thomas Robert (*Part 1 only*); BATES, Harold Selwyn; BEAUMONT, Harold Cameron; BELLAMY, Albert Alexander; BIDWELL, Hugh Dryden; BLACKBURN, Jack; BLACKMAN, Mervyn Henry Gerald; BLASE, Leslie; BODDY, James William (*Part 1 only*); BOOTH, Frederick Harry; BRAGG, Stanley Edward; BROADBENT, Francis George; BROADBENT, Ronald; BROWN, Vincent; BURDEN, Stanley Ernest; CHAPMAN, Ronald Frederick Henry (*Part 1 only*); CHAPPELL, Denis (*Part 1 only*); CHATE, Kenneth Haigh; CLARKE, David; COOPER, Robert Ernest (*Part 1 only*); COX, Geoffrey; CLEMENTSON, John George; CORBETT, George Uvedale Spencer; CROOK, Alec Charles (*Part 1 only*); CROOKES, Rowland (*Part 1 only*); DAKIN, John William Trevor (*Part 1 only*); DANIELL, James Henry; DARLOW, Henry Arthur Jack; DIXON, Charles John; DOREY, Wilfrid Athelstan (*Part 1 only*); DOWN, Albert Henry; FARMS, Kenneth William (*Part 1 only*); FISCH, Fran is Edward (*Part 1 only*); FISHER, Osborne Kirkton (*Part 1 only*); FISK, Sidney Hubert (*Part 2 only*); FORGE, James William Lindus; FOSTER, Jack Stroud (*Distinction in Thesis*); FOUNTAIN, Edgar Walter; FRANKS, Ronald Herbert; FULLER, Thelma Barbara (*Part 1 only*); GARWOOD, Walter William (*Part 1 only*); GOLDING, Donald Albert; GRAHAM, William Kenneth (*Part 1 only*); GREEN, Harry Albert (*Part 1 only*); GRIFFIN, John Oswald (*Part 1 only*); HALL, Harry Desmond (*Part 1 only*); HARGREAVES, Harry (*Part 1 only*); HARRIS, Eric Bright (*Part 1 only*); HARRIS, Maurice Henry (*Part 1 only*); HARRIS, Robert James (*Part 1 only*); HAWKINS, George Heslop; HAYES, Francis Oswald; HILL, John Dalton; HODGSON, Edward; HOLMES, Percy (*Part 1 only*); HOLTBY, Richard (*Part 1 only*); HOPKINS,

William Albert Larché; HOWARD, Francis Aylmer; HOWES, Anthony John (*Part 1 only*); HUGHES, Norman Cedric; JAMES, Bernard Vincent (*Part 1 only*); JAMES, Ernest Edwin; JONES, Albert Hugh Dennis (*Part 1 only*); JORDAN, Ernest Dennis; KENCHINGTON, Margaret Frances (*Distinction in Thesis*); KENNEDY, Thomas Brian; LAWRENCE, Frederick (*Part 1 only*); LEATHAM, James Wardle; LEE, Charles; LILLEY, Victor George; LOCK, Sidney Charles; LOVELL, Henry Wayne (*Part 1 only*); LOWE, Cecil William (*Part 1 only*); LUXTON, Horace Newcombe; LYON, George William; MACCONVILLE, David Gordon; MASON, Owen John Currie (*Part 1 only*); MAUDSLEY, John Alan; MILLS, David Butler; MOSS, Geoffrey; MULVEY, William John; MYERS, Denys (*Part 1 only*); NASH, Gordon Douglas; NICHOLLS, Herbert Edward; PACK, Edwin Victor (*Part 1 only*); PEACE, David Brian; PEARCE, Eric; PENN, Raymond Charles (*Part 1 only*); PICKETT, Charles John; PILLING, Harry (*Part 1 only*); PIFE, Frederick Robert (*Part 1 only*); PRACT, Arthur Ronald (*Part 1 only*); PRATTEN, Frederick Ralph; PRINCE, Arthur; PRINCE, Dorian Herbert Stanley; RALPH, Thomas Carlyle (*Part 1 only*); RALPH, William Herbert (*Part 1 only*); RAW, Kenneth Malcolm; REDKNAP, Philip Houghton; REEVES, Arthur George; RENNIE, Arthur (*Part 1 only*); ROSS, Sydney George William (*Part 1 only*); ROTHER, Vincent Jacob; ROYCE, Norman Alexander (*Part 1 only*); SAGE, Howard Wilfred Mortimer; SANDERS, Thomas Bale; SAYCE, Gordon Henry (*Part 1 only*); SMITH, Kenneth John; SPOONER, James Corping; STEWART, Ronald Alexander; SUTCLIFFE, Tom Allison (*Part 1 only*); TAYLOR, Maurice Ewan; THOMAS, David Lloyd (*Part 1 only*); THOMPSON, Alan; THOMPSON, Eric Hamilton (*Part 1 only*); THOMSON, William Frederick; TONG, Stephen Edward (*Part 1 only*); TORRENS, Richard Michael; VAUX, Edward Hugh; WAKEFIELD, Peter Laurence Hartley; WALLS, Arthur William (*Part 1 only*); WARD, Elizabeth Mufay; WATSON, Alexander Frederick; WHITE, Henry Alfred (*Part 1 only*); WILDGUST, Albert (*Part 1 only*); WILLIAMS, Alfred Edward; WILLIAMS, Ivan; WILLIAMS, Jonathan Winston; WOOD, Kenneth Martin (*Part 1 only*); WOOLMER, Stanley Charles; WOOSTER, Clive Edward Doré; YOUNG, Richard Arthur; ZUNZ, Werner (*Part 1 only*) (not a British subject).

*The Special Final Examination*

The R.I.B.A. Special Final Examination was held in London and Edinburgh from 13 to 19 July 1938.

Of the 62 candidates examined, 19 passed (8 of whom sat for and passed in Part 1 only and 1 of whom sat for and passed in Part 2 only), and 43 were relegated.

The successful candidates are as follows :—

BRIGGS, Alan Arthur ; BYNE, Arthur Cecil ; CARPENTER, Leonard John ; COOK, Ellis Jerden (*Part 1 only*) ; DEUGHARS, James (*Part 1 only*) ; GASKELL, Eric ; GLOVER, Archibald William (*Part 1 only*) ; HALL-KENNEY, James Herbert ; HELME, Leonard Douglas (*Part 1 only*) ; HUNT, Glenton de Glenton ; JURY, Archibald George (*Part 1 only*) ; MAWER, Eric Douglas ; MUIR, Harold John (*Part 2 only*) ; OAK, George William ; PERTWEE, Alice Nora (*Part 1 only*) ; PRICE, Brinley Richard (*Part 1 only*) ; TOROK, Gyula Laszlo (not a

British subject) ; WILKINSON, Eric Valentine ; WOODHEAD, Alan John (*Part 1 only*).

*The Examination in Professional Practice for Students of Schools of Architecture recognised for exemption from the R.I.B.A. Final Examination*

The Examination was held in London and Edinburgh on 19 and 21 July 1938. Of the 17 candidates examined, 9 passed and 8 were relegated.

The successful candidates are as follows :—

ALLEN, William Alexander ; GOLD, Bernard ; HARRISON, Ernest Ronald ; HENDERSON, John George Drysdale ; HIRD, John Grenfell ; KIRKWOOD, James Smith ; LENNOX, Gavin Strathearn Allan ; SANDERS, William Hamilton ; SCHNEIDER, Arnold.

## Probationers

## R.I.B.A. PROBATIONERS

The following were enrolled as Probationers of the Royal Institute during the month of July 1938 :—

Ainsworth, Ronald Arthur, *Lancaster*. Alexander, Douglas, *Welwyn Garden City*. Amandkav, Motiram Vinayak, *Bombay*. Ashmead-Bartlett, Deryk Lionel, *London*. Avenell, Geoffrey, *Bournemouth*. Baynes, Edward Anthony John, *London*. Bell, Guilford Marsh, *London*. Bennetts, William Harry, *Redruth*. Beresford-Jones, Michael Longford, *Canterbury*. Bewes, Leslie Arthur Lawrence, *Southend-on-Sea*. Bodgener, Geoffrey Cruse, *Wallington*. Boswell, Eric Stanley, *Oxford*. Boustead, Colin Joseph Edward, *Oxford*. Bowes, Joseph, *Barrow-in-Furness*. Boyle, Kevin Gerard, *Ballymoney, Northern Ireland*. Brooks, Ronald Keith, *London*. Brown, Eric Ernest, *Southampton*. Brown, Richard, *Ferryhill, Co. Durham*. Brownsword, Beryl, *London*. Burchell, John Tremayne, *Edinburgh*. Carlin, William Graham, *Bebington*. Carpenter, Leonard William, *Thornton Heath*. Carter, John Edward, *Liverpool*. Casson, John, *Mansfield*. Caulfield, Roy Frank Frederick, *Birmingham*. Chignall, Ernest Gilbert, *Gidea Park*. Clinging, Brodie John, *Forest Hill*. Cooke, Vernon, *London*. Corby, Eric Roy, *Oxhey, Herts*. Cordwell, John Donald, *London*. Cradick, Harold George, *Upper Parkstone*. Crossland, Brian, *Preston*. Crouch, Kenneth Thomas, *Wisbech*. Curtis, Frederick Francis Charles, *Liverpool*. Dando, Kenneth Walter, *Bristol*. Daniel, Harwin Morris, *Swansea*. Dewar-Mills, Donald Campbell, *Blackheath*. Davies, Richard Llewellyn, *London*. Davies, William Alewyn, *London*. Drury, Robert Benson, *Westgate-on-Sea*. Endres, Anton Otto, *London*. Fagg, Arthur John, *London*. Follett, Stanley James, *Bromley, Kent*. Forbester, Edward, *Newcastle-upon-Tyne*. Foster, Christopher Henry, *Lancaster*. Gent, Raymond Blandford, *Gibbs, Philip Evelyn, Brighton*. Godbole, Damodar Mahadeo, *Agashii, India*. Gokhale, Janardan Dinkar, *Bombay*. Gold, Mary Janet, *Moreton-in-the-Marsh*. Goodall, Robert, *York*. Greatrex, Roland Ivor, *London*. Green, Frederick, *Doncaster*. Green, John Harry, *London*. Greenwood, Diana, *Shoreham, Kent*. Griffith, Caradoc Owen, *Kettering*. Grossert, Thomas Sharp, *Pencaitland, E. Lothian*. Gupte, Charudatta Shankar, *Bombay*. Halford, Frederick Samuel, *Blackpool*. Halford, John Ernest Gordon, *Tnno*. Hall, Cecil, *Liverpool*. Hann, Edmund Graeme, *Ross-on-Wye*. Harris, Norman Brocas, *London*. Haybittle, Ernest Joseph, *London*. Hendry, Leslie Alec, *Grimsby*. Henley, Jack Alphonso, *Hereford*. Herriott, James Morris, *Norwich, Norfolk*. Hewitt, Eric, *Workington*. Hill, Frederick Barker, *Kingston, Jamaica*. Hirsch, Joseph Max, *London*. Holder, Neville Ernest Amphlett, *Watford*. Hollamby, Edward Ernest, *London*. Horne, Edward Parker, *London*. Howarth, John, *Southport*. Howat, James MacLeod,

*Greenock*. Hughes, Robert Stanley, *Liverpool*. Hunt, Roy Arthur, *Harrow*. Isaacs, Thomas Vincent, *Bombay*. Johnson, Donald Edwin, *New Cross*. Joglekar, Shridhar Krishna, *Bombay*. Kauffmann, Edward Crompton, *London*. Kelsey, Norman George, *Portsmouth*. Kennedy, Charles Victor Kitchener, *London*. Laws, Kenneth Percy, *Folkestone*. Leggatt, Richard Walter, *Southsea*. Leifer, Alec Nathan, *Westcliff-on-Sea*. Lewis, William John, *Monkseaton*. Lias, Geoffrey James, *Penzance*. Lyle, Ruth Orton, *Camberley*. Lyne, Augustus John, *London*. MacBride, John Alexander, *Southport*. McCann, Duncan William, *Birkenhead*. McCowan, Alexander John, *Aberdeen*. McDowall, Bessie, *Glasgow*. Maguire, John, *Loanhead, Midlothian*. Marriott, Douglas Haig, *Bromley, Kent*. Meadows, Ronald, *Liverpool*. Melville, Ian Scott, *Bebington, Ches*. Mhatre, Krishnarao Balkrishna, *Bombay*. Morris, David, *Cheltenham*. Moulin, Louis Charles, *London*. Murray, Hugh William Clarke McDermot, *Kingston, Jamaica*. Naismith, Robert James, *Leith*. Nelson, Hector William, *London*. Nixon, Robert, *London*. O'Riordan, James, *Cork*. Parker, George Kenneth, *Dartford*. Peatfield, Thomas Alexandre, *London*. Pethybridge, Robert Edward, *London*. Pitts, James Noel, *Loughborough*. Proffitt, Edward James, *High Wycombe*. Purves, Derek Gordon Ian, *London*. Redhouse, Alexander, *London*. Reed, Alfred John, *London*. Russell, Maurice, *Aberdeen*. Savage, Kenneth Edward Alger, *Watford*. Scott, Alexander, *Dundee*. Seaton, Cecil Leslie Frank, *Birmingham*. Seward, Mary Hamilton, *London*. Sharp, Charles Vivian Peter, *Ipswich*. Shephard, Michael Henry, *Birkenhead*. Shibley, Mary Kathleen, *Reigate*. Shore, Theodore, *Southgate*. Silcock, Alan, *Seven Kings*. Sinclair, Edward Anthony, *Petts Wood*. Singleton, Frank William, *Bromley, Kent*. Sisson, Stephen, *Huddersfield*. Smith, David Barnard, *Orpington*. Smith, Douglas Frank, *Barnstaple*. Smith, Peter Charles, *London*. Smith, Stanley Ernest, *London*. Spence, James McKay, *Edinburgh*. Stammwitz, Geoffrey Carmichael, *London*. Stockton, George Neville, *Luddenden Foot*. Taylor, James Thomas Reekie, *Edinburgh*. Taylor, Theo, *Uttermare, Taunton*. Thomas, Cyril Llewellyn, *Lewisham*. Thomas, Richard Paget, *Bulawayo*. Thompson, Matthew Rowntree, *Sunderland*. Thorne, George Edward, *London*. Thurgood, Reginald, *Oxford*. Vaines, Samuel, *Bolton*. Vijayakar, Mukund Mothabhoj, *Bombay*. Wade, John [Jnr.], *Sutton-in-Ashfield*. Wallis, Michael John, *Wetherham*. Wear, Eric Frederick, *Burley-in-Wharfedale*. Webb, Lawrence Oswald, *London*. Welsh, Peter Austin, *Dunston-on-Tyne*. White, Albert Walter Vousdon, *Leyton*. Wilkinson, Edith Kathleen, *Warrington*. Williams, Michael Alan Shenton, *Southport*. Wilson, Alan, *Lancaster*. Wilson, Frank Melrose, *Easington Village, Co. Durham*. Wilson, James Alison, *Putney Heath*. Yardi, Sadashiv Raghunath, *Bombay*. Yates, Peter, *Wanstead*.

## Notices

### EXHIBITION OF DRAWINGS SUBMITTED FOR THE ARCHIBALD DAWNAY SCHOLARSHIPS 1938

The exhibition of the drawings submitted for the Archibald Dawnay Scholarships 1938 will remain open in the Reception Room at the R.I.B.A. until Saturday, 17 September 1938, between the hours of 10 a.m. and 7 p.m. (Saturday, 10 a.m. and 2 p.m.).

### THE SMALL HOUSE EXHIBITION THURSDAY, 13 OCTOBER, TO SATURDAY, 29 OCTOBER 1938

The Small House Exhibition (see page 955) will be opened at 3 p.m. on Thursday, 13 October, by Miss Ellen Wilkinson, M.A., M.P., and Mr. J. B. Priestley, LL.D., D.Litt.

All members are cordially invited to the opening and are asked to do everything they can to induce others to visit the exhibition.

The exhibition will be open to the public from :

4.30 p.m. to 8 p.m. on Thursday, 13 October, and then from Friday, 14 October, to Saturday, 29 October, between the hours of 10 a.m. and 8 p.m. (Saturdays, 10 a.m. and 5 p.m.).

### EXHIBITIONS OF DESIGNS OF STUDENTS EXEMPTED FROM THE R.I.B.A. INTERMEDIATE AND FINAL EXAMINATIONS

The designs of students of Schools of Architecture recognised for exemption from the R.I.B.A. Final Examination will be on exhibition at the R.I.B.A. from 29 September to 4 October 1938 inclusive between the hours of 10 a.m. and 8 p.m. (Saturday, 10 a.m. and 5 p.m.). The R.I.B.A. Silver Medal for Recognised Schools of Architecture and £5 in Books is awarded for the best set of drawings submitted.

The designs of students of Schools of Architecture recognised for exemption from the R.I.B.A. Intermediate Examination will be on exhibition at the R.I.B.A. from 11 to 14 October 1938 inclusive between the hours of 10 a.m. and 8 p.m. The R.I.B.A. Bronze Medal and £5 in Books is awarded for the best set of drawings submitted.

### THE USE OF TITLES BY MEMBERS OF THE ROYAL INSTITUTE

In view of the passing of the Architects Registration Act 1938, members whose names are on the Statutory Register are advised to make use simply of the title "Chartered Architect" after the R.I.B.A. affix. The description "Registered Architect" is no longer necessary.

Members who are qualified for registration and have not already done so are reminded of the importance of applying for such registration without delay. Full particulars will be sent on application to the Secretary R.I.B.A.

### THE BUILDING EXHIBITION, OLYMPIA, 1938

It has been customary for many years past for the Secretary of the Institute to send an invitation to members to attend the biennial exhibitions at Olympia. Through the kindness of the organiser of the exhibition, Mr. H. Greville Montgomery [*Hon. A.*], each ticket presented will ensure the payment of 2s. as a contribution to the Architects' Benevolent Society.

The exhibition is open from 16 September to 1 October inclusive, and it is hoped that members of the Institute will use the ticket that will be found enclosed with this issue of the JOURNAL.

### PROFESSIONAL ADVERTISING

The attention of the Practice Committee has been drawn to the fact that the publishers of certain journals are approaching architects for details of their professional activities, which the publishers propose to embody in the editorial columns of their journals. In the case of one particular firm of publishers several members forwarded to the Institute the proposed article as drafted by the editor and sent to the architects for any additions or amendments the architects desire. In each case the wording of the articles is identical, with the exception of the names and addresses of the firms of architects to whom they were sent.

The Committee desire to warn members generally against this undesirable form of publicity. The acceptance by members of invitations of this nature from firms of publishers is, in the opinion of the Committee, directly contrary to the Code of Professional Practice and tantamount to advertising.

### ARCHITECTURAL COMPETITIONS ASSESSORS' AWARDS

All architects who take part in architectural competitions are reminded by the Council of the R.I.B.A. that participation in a competition is a definite acceptance of the principle that the award of the assessor is final and binding upon themselves as well as upon the promoters, and that any competitor who feels that he has real ground for dissatisfaction with an assessor's award should communicate with the Secretary of the R.I.B.A.

Further, all architects, whether competitors or otherwise, are reminded that discussion or correspondence in the public or professional Press which tends to criticism or disparagement of an assessor or award cannot alter the final and binding effect of the award, but may prejudice architects and the whole competition system in the opinion of the public, and is, therefore, highly undesirable.

### LICENTIATES AND THE FELLOWSHIP

The present regulations governing the examination of Licentiates who, being otherwise eligible, wish to qualify for admission as Fellows provide that in the first place the

candidate shall submit for approval by the Council working drawings of one or more of his executed buildings, supplemented by photographs and by original sketches or measured drawings of actual work, and—

- (1) should the work so submitted be, in the opinion of the Council, of sufficient merit to exempt the candidate from further examination, he may be so exempted ;
- (2) if the work submitted is approved by the Council the candidate is required to submit himself to an examination ;
- (3) if the work so submitted is, in the opinion of the Council, inadequate, his application is not further entertained.

By a resolution of the Council passed on 4 April 1938, on and after 1 January 1939 all candidates whose work is approved will be required to sit for the examination, which will be the design portion of the Special Final Examination, and no candidates will be exempted from the examination.

NOTE.—The above resolution will not affect Licentiatees of over 60 years of age applying under Section IV, Clause 4 (c) (ii) of the Supplemental Charter of 1925.

#### ASSOCIATES AND THE FELLOWSHIP

Associates who are eligible and desirous of transferring to the Fellowship are reminded that if they wish to take advantage of the election to take place on 5 December 1938 (overseas candidates 6 February 1939) they should send the necessary nomination forms to the Secretary R.I.B.A. not later than Saturday, 1 October 1938.

#### OVERSEAS APPOINTMENTS

When members are contemplating applying for appointments overseas they are recommended to communicate with the Secretary, R.I.B.A., who will supply them with any available information respecting conditions of employment, cost of living, climatic conditions, etc.

#### NEW BUILDING MATERIALS AND PREPARATIONS

The Science Committee wish to draw attention to the fact that information in the records of the Building Research Station, Garston, Watford, is freely available to any member of the architectural profession, and suggest that architects would be well advised, when considering the use of new materials and preparations of which they have had no previous experience, to apply to the Director for any information he can impart regarding their properties and application.

#### THE NATIONAL ASSOCIATION OF WATER USERS

Members are reminded that the National Association of Water Users, on which the R.I.B.A. is represented, exists for the purpose of protecting the interests of consumers.

Members who experience difficulties with water companies, etc., in connection with fittings are recommended to seek the advice of the Association. The address of the Association is 46 Cannon Street, London, E.C.4.

#### CESSATION OF MEMBERSHIP

Under the provisions of Byelaw 21, the following has ceased to be a member of the Royal Institute :

*As Licentiate :*

Francis Norcott Hornbrook.

## Competitions

The Council and Competitions Committee wish to remind members and members of Allied Societies that it is their duty to refuse to take part in competitions unless the conditions are in conformity with the R.I.B.A. Regulations for the Conduct of Architectural Competitions and have been approved by the Institute.

While, in the case of small limited private competitions, modifications of the R.I.B.A. Regulations may be approved, it is the duty of members who are asked to take part in a limited competition to notify the Secretary of the R.I.B.A. immediately, submitting particulars of the competition. This requirement now forms part of the Code of Professional Practice in which it is ruled that a formal invitation to two or more architects to prepare designs in competition for the same project is deemed a limited competition.

#### BRIERLEY HILL, STAFFS : NEW MUNICIPAL BUILDINGS

The Brierley Hill Urban District Council invite architects of British nationality to submit in competition designs for new Municipal Buildings.

Assessor : Mr. Verner O. Rees [F.].

Premiums : £250, £150 and £100.

Last day for submitting designs : 30 November 1938.

Last day for questions : 30 June 1938.

Conditions of the competition may be obtained on application to Mr. F. Oakes, Clerk to the Brierley Hill U.D.C., Council Offices, Moor Street, Brierley Hill, Staffs. Deposit £2 2s.

#### FALKIRK : NEW NURSES' HOME FOR THE ROYAL INFIRMARY

The Directors of the Falkirk and District Royal Infirmary invite Chartered and/or Registered Architects in private practice in Scotland to submit in competition designs for a new Nurses' Home to be erected in the Infirmary grounds.

Assessor : Mr. Charles G. Soutar [F.].

Premiums : £150, £100 and £50.

Last day for submitting designs : 31 October 1938.

Last day for questions : 5 September 1938.

Conditions of the competition may be obtained on application to Mr. Duncan Kennedy, W.S., Hon. Secretary, Falkirk

and District Royal Infirmary, Major's Loan, Falkirk.  
Deposit £1 is.

#### NEWCASTLE-UPON-TYNE: NEW TOWN HALL

The Council of the City and County of Newcastle-upon-Tyne invite architects of British nationality to submit in competition designs for a new Town Hall.

Assessor: Mr. Verner O. Rees [F].

Premiums: £750, £500 and £300.

Last day for submitting designs: 30 November 1938.

Last day for questions: 6 July 1938.

Conditions and instructions to competitors, together with a site plan, may be obtained on application to Mr. John Atkinson, Town Clerk, Town Hall, Newcastle-upon-Tyne. Deposit £2 2s.

#### ST. GEORGE'S HOSPITAL: RECONSTRUCTION

The President, Vice-President, Treasurer and Governors of St. George's Hospital invite architects practising in the United Kingdom and Northern Ireland to submit in competition designs for the reconstruction of St. George's Hospital, Hyde Park Corner.

Assessors: Dr. H. V. Lanchester [F].

Mr. T. A. Lodge [F].

Premiums: £500, £300 and £200.

The last day for submitting designs has been extended to 15 October 1938.

Last day for questions: 1 March 1938.

Conditions of the competition may be obtained on application to The House Governor, St. George's Hospital, Hyde Park Corner, London, S.W.1. Deposit £2 2s.

#### SHREWSBURY: NEW SENIOR SCHOOL

The Corporation of Shrewsbury invite architects to submit in competition designs for a new Senior School to be erected at Broom Hall, Ellesmere Road, Shrewsbury.

Assessor: Mr. C. Cowles-Voysey [F].

Premiums: £200, £150 and £100.

Last day for submitting designs: 21 November 1938.

Last day for questions: 10 September 1938.

Conditions of the competition may be obtained on application to Mr. R. F. Prideaux, Town Clerk, Guildhall, Shrewsbury. Deposit £1 is.

#### FORTHCOMING COMPETITIONS

Other competitions which it is proposed to hold, and the conditions for which are not yet available, are as follows:—

##### BRIGHOUSE: NEW MUNICIPAL BUILDINGS

Assessor: Mr. James R. Adamson [F].

##### COSELEY, STAFFS: NEW SCHOOL

Assessor: Mr. A. C. Bunch [F].

##### EDMONTON: NEW TOWN HALL BUILDINGS

Assessor: Mr. E. Berry Webber [A].

##### GODALMING: NEW MUNICIPAL BUILDINGS

Assessor: Mr. Stanley C. Ramsey [F].

##### GLOUCESTER: NEW SWIMMING BATH AND FIRE STATION

Assessor: Mr. C. F. W. Dening, R.W.A. [F].

#### METROPOLITAN EAR, NOSE AND THROAT HOSPITAL: RECONSTRUCTION

Assessors: Messrs. Charles Holden [F.] and Lionel G. Pearson [F].

#### OLDHAM: ELECTRICITY OFFICES AND DEPARTMENTAL BUILDINGS

Assessor: Professor R. A. Cordingley [F].

#### SOUTH SHIELDS: ASSEMBLY HALL AND LIBRARY

Assessor: Mr. Arthur J. Hope [F].

#### WREXHAM: NEW TOWN HALL

Assessor: Mr. Herbert J. Rowse [F].

#### COMPETITION RESULTS

##### METROPOLITAN POLICE STATION: MARYLEBONE ROAD

1. Messrs. Vine and Vine [A.A.] (London).
2. Messrs. Sir John Burnet, Tait and Lorne [F.F.] (London).
3. Messrs. Farquharson and McMorran [F/A.] (London).

Commended:

Mr. F. Gibberd (London).

Messrs. O'Rourke and Pickmere [A.A.] (London).

Messrs. E. D. Lyons [A.], L. Israel [A.], and C. H. Elsom (Student) (London).

##### ROYAL NATIONAL Eisteddfod of Wales. CARDIFF, 1938: ARCHITECTURAL COMPETITIONS

(A) Scheme comprising Physical Culture Centre and Baths:

1. Mr. Gordon D. Lloyd Richards [A.] (Winchester).
2. Mr. J. L. Harrison (Cottingham, E. Yorks.).
3. Mr. Idris J. Lewis [A.] (Cardiff).

(B) Group of Twelve Dwellings for Aged People:

1. Miss Mary McKenzie [A.] (Cardiff).
2. Mr. Kenneth C. Twist (Newton-le-Willows, Lancs.).

##### COMPETITION FOR TWENTY HOUSES ON THE KINGSTON BY-PASS

1. Mr. K. Hart (Student) (Nottingham).
2. Messrs. John Grey and D. F. Martin-Smith [F/A.] (London).
3. Mr. George A. Rose [F.] (Chelsfield, Kent).

Commended:

Mr. Cyril Sjostrom [A.] (London) (two schemes).

Messrs. P. J. Westwood and Sons [F/A.] (London).

##### COMPETITION FOR DESIGNS FOR BRICK FIREPLACES OR FIRE SURROUNDS.

1. Messrs. E. W. Edwards and F. Winward [A.] (Southampton).
2. Mrs. A. M. Osborne (London).
3. Mr. H. E. Burton (Student) (Smethwick).

Commended:

Mr. F. W. Griffiths [A.] (Glasgow).

Messrs. P. J. Westwood & Sons [F/A.] (London).

Mr. J. P. Kenna (London).

## MEMBERS' COLUMN

*Owing to limitation of space, notices in this column are restricted to changes of address, partnerships vacant or wanted, practices for sale or wanted, office accommodation, and appointments vacant. Members are reminded that a column in the Advertisement Section of the Journal is reserved for the advertisements of members seeking appointments in architects' offices. No charge is made for such insertions and the privilege is confined to members who are definitely unemployed.*

### PRACTICE FOR SALE

ASSOCIATE must dispose of practice in S.E. coast town on taking up executive Government appointment. Average net income for the past four years about £500 p.a. Ample scope for development for younger and active man in the town and particularly in the surrounding districts. Type of practice would enable change-over to be made with less than usual risk of loss of clientele and present principal would continue in an advisory or consultant capacity for some time if necessary. Price, including all fittings, fixtures, office equipment and outstanding fees, £1,050. Quick sale essential. Full particulars from auditors to the practice, Messrs. Clemetson & Co., Chartered Accountants, 34, Pencester Road, Dover, Kent.

### NEW PARTNERSHIPS

MR. GILBERT PRESTON SCOTT [J.], P.A.S.I., has entered into partnership with Mr. Allan Hargreaves, A.M.Inst.C.E. The business will be carried on under the name of Hargreaves & Scott, at 17 Crook Log, Bexleyheath, Kent.

MR. AUSTEN ST. BARBE HARRISON [F.], M.T.P.I., Mr. T. S. BARNES [J.], A.A. Diploma and Mr. R. P. S. HUBBARD [J.], B.Arch., have entered into partnership and will practise in the name of Harrison, Barnes & Hubbard at 3 Southampton Street, London, W.C.1. Telephone: Hubbard 7922.

### NEW PRACTICES

THE practice of Mr. Ivan F. Roberts [L.], of Station Road East, Oxted, Surrey, has been taken over by Mr. F. Sutton Smith [L.], of Wallington, Surrey, and will be carried on by him at Lloyds Bank Chambers, Station Road West, Oxted.

MR. ARTHUR BAILEY [J.] has commenced practice at 12 Gray's Inn Square, W.C.1. Telephone: Chancery 8169.

### PARTNERSHIP OFFERED

F.R.I.B.A. desires to negotiate a partnership in successful practice (established 40 years in South Wales). Excellent opportunity for energetic young man, or would consider the sale of such practice outright.—Box 2398, c/o Secretary R.I.B.A.

### PARTNERSHIPS WANTED

YOUNG ASSOCIATE with 7 years' varied experience in private practice and as chief assistant seeks partnership in well-established London firm. Some capital available. Replies in strict confidence. Box 1788, c/o Secretary R.I.B.A.

ARCHITECT, 32, with considerable architectural experience and ability in office organisation, desires progressive position with view to partnership. Some capital is available. At present office manager to one of the largest West End practices. Write Box 9838, c/o Secretary R.I.B.A.

### ASSISTANCE OFFERED

FELLOW, age 48, retired official appointment for reasons of health, desires to get into touch with London architect having work in Cornwall, with view to co-operation as may be mutually agreed.—Box 2288, c/o Secretary R.I.B.A.

### OFFICE ACCOMMODATION TO LET

TEMPLE.—To let, two rooms with North light, quiet and convenient, 30s. p.w. the pair.—Apply Box 3088, c/o Secretary R.I.B.A.

WESTMINSTER.—In architect's suite on third floor facing Victoria Street, two good rooms communicating (21 ft. by 16 ft. and 14 ft. by 12 ft.). North light. Lift and attendant. Rent £135 p.a.—Reply Box 2988, c/o Secretary R.I.B.A.

A.R.I.B.A., with offices in the Temple, offers London address to provincial or other Architect or Surveyor for interviews, correspondence and occasional drawing. Moderate terms.—Write Box 5938, c/o Secretary R.I.B.A.

HOLBORN.—Firm of architects (members R.I.B.A.) have four well-lighted offices on the second floor of their building to let for professional purposes, either together or as two separate suites. Rent for each suite of two offices, £75 per annum, inclusive.—Box 1758, c/o Secretary R.I.B.A.

TO LET in original half-timbered portion of Staple Inn (recently reconstructed), two rooms. Separate entrance. Excellent light. Every convenience. Moderate rent.—Apply Box 3938, c/o Secretary R.I.B.A.

### CHANGES OF ADDRESS

MR. W. J. BIGGS has changed his address from 115 Park Street, W.1, to "Park West," Kendal Street, W.2. (Telephone: Paddington 1280.)

MR. O. P. BERNARD [L.] has changed his address from Bush House, Aldwych, W.C.2, to 93 Park Lane, W.1. Telephone: Mayfair 6759.

MR. CHARLES SCOTT has changed his address from 8 Grove Avenue, Norwich, to Harford Hills, Marston Lane, Ipswich Road, Norwich.

MR. A. DADLEY-MOORE [Student] has removed his offices to No. 3 King's Bench Walk, London, E.C.4. Telephone No. Central 3764.

## Architects' and Surveyors' Approved Society

### ARCHITECTS' ASSISTANTS' INSURANCE FOR THE NATIONAL HEALTH AND PENSIONS ACTS

Architects' Assistants are advised to apply for the prospectus of the Architects' and Surveyors' Approved Society, which may be obtained from the Secretary of the Society, 113 High Holborn, London, W.C.1.

The Society deals with questions of insurability for the National Health and Pensions Acts (for England) under which, in general, those employed at remuneration not exceeding £250 per annum are compulsorily insurable.

In addition to the usual sickness, disablement and maternity benefits, the Society makes grants towards the cost of dental or optical treatment (including provision of spectacles).

No membership fee is payable beyond the normal Health and Pensions Insurance contribution.

The R.I.B.A. has representatives on the Committee of Management, and insured Assistants joining the Society can rely on prompt and sympathetic settlement of claims.

## Architects' Benevolent Society

### TO ARCHITECTS:

Advise your clients to acquire their houses in the Life Assurance way.

No survey fees. No office legal charges.

Eighty per cent. advances;  $4\frac{1}{2}$  per cent. gross interest.

Mortgage discharged in the event of the borrower's death.

Example of an advance in the case of a borrower, aged 35 next birthday, who has built a house valued at £1,000 and takes an 80 per cent. loan:—Net Quarterly Payment over 25 years, £19 (approx.).

N.B.—In the case of houses in course of erection:—One half of loan advanced when walls are up and roof on.

Write for particulars to: The Secretary, A.B.S., Insurance Dept., 66 Portland Place, London, W.1. Telephone: Welbeck 5721.

### R.I.B.A. JOURNAL

DATE OF PUBLICATION. — 1938; 17 October.

8

ur  
or  
es

ly  
nt.  
/o

et,  
ug-  
ush  
e :

ove  
ad,  
to  
ral

HE

ctus  
ich  
igh

the  
uder  
not

nity  
ntal  
alth

e of  
can

y  
rance

next  
es an  
£13

alf of

Dept.,